NEW REMEDIES.

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NEW REMEDIES is issued regularly on the middle of each month, dated for the month ahead. All changes of advertisements should reach us before the 5th, and *no new advertisement can be inserted after the 12th.*

Electrotypes of the illustrations contained in NEW REMEDIES *will be furnished for 50c. per square inch.*

EDITORIAL.

WE publish as a supplement to this number the draft of a law proposed by Dr. E. R. Squibb, of Brooklyn, for the prevention of adulterations of food and medicine. Persons who are at all familiar with the thorough manner in which Dr. Squibb accomplishes a work of this kind may be led to doubt somewhat whether the publication and discussion of the proposed law in the secular journals will prove advantageous, while on the other hand it will be the more likely to awaken the strongest opposition on the part of persons interested in the manufacture and sale of fraudulent wares.

If we could be sure that the legislative committee into whose hands the draft will eventually be put would be either capable or disposed to regard only the interests of the public at large in the construction of the law, we would be more hopeful with regard to the ultimate issue of Dr. Squibb's scheme, but it is hardly to be doubted that the class of dealers against which the act is directed will spare neither labor nor expense to secure such modifications as will increase the number of gaps and opportunities for legal quibbles through which they may escape. Another element of weakness is the fact that the adoption of the act in its present form would cut off the members of the Legislature from any participation in the appointment of the officers composing the Board, from the least to the highest, and thus remove from their own reach the political influence to be derived from the control of so considerable a patronage. It hardly needs to be said that this is one of the least likely of any of the things which the Legislature may be expected to do.

In view of the determined opposition which the draft is likely to awaken, we have thought it very desirable to publish it with Dr. Squibb's comments in full; and we urge upon physicians and pharmacists the duty which they owe to the public as well as themselves, to become entirely familiar with it, and not only to suggest any changes which will render its enforcement more expeditious and certain, but, also, that they do what they can to create a public sentiment in its favor. We may rest assured that, however well and carefully the draft may be made, it will never become a law until the mass of the people of the State demand it.

PROFESSOR BEDFORD'S letter on page 91, in relation to the organization of a State Pharmaceutical Association, should receive the careful attention of all our readers in this State. It appears to us, however, that the commonwealth is more in need of an organization of the drug trade. The number of thoroughly educated pharmacists is small compared with the persons engaged in the sale of drugs, medicines, cosmetics, paints, oils, glass, and allied substances, and the very encouraging results of the organization in the West, known as the "Western Wholesale Drug Association, leads us to think that it would be worth the effort to organize upon a *trade* rather than upon a *professional* basis. An association of this character would be especially valuable just now, in view of the very great assistance which it might render in the adoption of a law to prevent the adulteration of drugs and medicines, and for the purpose of contributing to an increased confidence in and security of business transactions. Now that the drug trade appears to be reviving in spirit and confidence, the mutual understanding which would grow out of an association of the kind we suggest, would tend to strengthen the upward tendency of business transactions, not only in the sale of drugs alone, but in all the trades which in one way or another depend upon it.

In reading the reports of proceedings at the meetings of Pharmaceutical Associations, we have had occasion to observe the apologetic manner in which purely trade matters have been referred to.

It is quite natural that in an association organized upon a scientific basis, many of these trade questions are seldom or never discussed, yet we venture little in saying that it is upon their proper adjustment that the success of business ventures depends.

MATERIA MEDICA, PHARMACY, AND THERAPEUTICS.

Boldo or Boldu.*

THE Boldo (*Peumus Boldus*, Molina) of which we give this month a full-page colored plate of the male species, is a native of Chili, where it is in some places a very common shrub, 10 to 20 feet in height; growing on the sunny slopes of hills, and frequently in gardens. Its leaves and especially its flowers are very fragrant, the latter appearing most abundantly in the autumn,† although the plant appears to blossom all the year. Its geographical limits may be said to extend from the province of Aconcagua in the north, to Osorno in the south. It was first made known to Europeans by Father Feuillée, in 1720.‡ The buds are slow in maturing, and for several months appear to be almost stationary. In a dried state the leaves have a reddish-brown color, a coriaceous texture, are covered with small glands, and when rubbed their odor resembles that of the lauraceæ and labiates, such as sweet gale (*Myrica Gale* L.); their taste is aromatic and pungent.

In northern and central Chili the shrub attains generally only a small size; in the southern provinces, however, as for instance in that of Valdivia, it grows to a great height, the botanist Philippi having met with specimens three feet in diameter.§ Its wood is very hard, and, when cut, emits an odor resembling that of common pepper. It is, however, but seldom used, and then only for making plough-shares and charcoal. The bark of this species, as well as of others of the same genus, contains much tannin, and is used in tanning and dyeing, and the sweet mesocarp of the fruit is eaten.

Messrs. Bourgoin and C. Verne have found that the leaves contain a volatile oil and an alkaloid which they have called *boldine*. The former is the most abundant, and is yielded by distillation in the proportion of about two per cent. The odor of the oil is similar to that of the plant, and appears to be a mixture of several oils with different boiling points. It gives no reaction with litmus, is but slightly soluble in water, but gives to the latter its flavor and a slightly acid reaction. In alcohol it is freely soluble, and sulphuric acid colors it hyacinth-red; nitric acid turns it violet; potash, red; and hydrochloric acid decolorizes it. In a crude state the oil is highly colored, but becomes a clear yellow by rectification, while its color is at the same time improved. Its taste is pungent.

The remedial properties of boldo are mainly due to its oil and to a lesser extent to boldine which exists in the leaves, according to the aforenamed authorities, in the proportion of only one part per 1,000. Boldine is but slightly soluble in water which it renders alkaline and bitter. It is soluble in alcohol, ether, and chloroform.

Boldo acts as a stimulant to digestion, and exerts a marked influence on the liver; this property residing in both the leaves and young stems. It is said that the first knowledge of its virtues was obtained through its action on a flock of sheep suffering from a disease of the liver, and which had been shut up in an inclosure in which the gaps had recently been repaired with boldo twigs. The sheep ate the twigs and leaves and are said to have recovered their health very rapidly after passing large quantities of the "fluke worm," or gourd worm (*Distoma hepaticum* L.), a parasite which sometimes infests the biliary ducts of the sheep and produces the so-called liver disease.

Dujardin-Beaumetz made a series of experiments with the drug, with success in cases of atony of various organs when quinia was not tolerated by the patient, but care appears to be necessary in its use, as large doses produce vomiting. It does not seem to have found much favor in European practice, whereas in South America its various preparations are prescribed as digestives, carminatives, tonics, and diaphoretics. In the form of a powder the leaves are used as a snuff.

Bentley and Trimen, in their work on Medicinal plants, give a complete botanical description of the plant and an illustration from which we have copied our own. The drug is officinal in neither the U. S. nor Br. Pharmacopœias, and is not mentioned in the first edition of Pharmacographia by Flückiger and Hanbury. Redwood's supplement to the Br. Phar., (1857) contains no reference to it, but most of its literature is given by B. and T.*

* The text of this article has been taken from the following sources: Bentley and Trimen, *Medicinal Plants*, No. 217; Kosteletzky's *Flora*, I., 436; Edouard Sève (Consul General of Belgium, in Chili), *Le Chili tel qu'il est*, Valparaiso, 1876, vol. I., p. 401. The illustration is borrowed from Bentley and Trimen's *Medicinal Plants*.

† The seasons of the year here given, according to Bentley and Trimen, probably refer to those of the northern hemisphere. Mr. Edouard Sève, in the work quoted in the previous note, states that the flowers appear in the beginning of spring (our autumn), sometimes in August; and that the fruit ripens at the end of summer, in the month of February or beginning of March.

‡ *Journal des Observations physiques, etc.*, Paris, 1720, 5 vols. III. Also in the following work by the same author: *Histoire des plantes médicinales qui sont le plus en Usage aux Royaumes de Pérou et du Chili*, p. 11; plate VI.

§ Ed. Sève, l. c., p. 401.

* *Journ. de Pharm. et de Chim.*, 4th ser., vol. xv., p. 223; *Pharm. Journ.*, ser. 3, vol. iii., p. 323, and *Year Book of Pharm.* (1873), p. 97, from *Journ. Pharm., Chim.*, 4th ser., vol. xvi., p. 191; *Pharm. Journ.*, ser. 3, vol. v., pp. 404–453; *Etude sur le Boldo*, par Claude Verne, Paris, 1874; *Proc. Amer. Pharm. Assoc.*, vol. xxiii., pp. 227–335.

To this we will add the following: NEW REMEDIES, vol. ii., p. 356, from *L'Union Pharmaceutique*, Nov., 1872; vol. iv., pp. 43–165.

The U. S. Dispensatory (14th ed., p. 1,596) gives the dose as fifty centigrams of a tincture made by macerating 100 parts of the drug in 500 parts of alcohol, the dose being increased gradually. Verne recommends that the wine of boldo be made with 3 parts of the leaves and 100 parts of Madeira wine. An aqueous and an alcoholic extract are also prepared, the latter by evaporating the tincture. Its use is principally as a stimulant to digestion and a tonic in conditions accompanied by exhaustion. Like most other bitters, it has been used in malarial affections, in which it is very likely of value, through its power to modify the circulation in the liver.

The Chilians use the leaves, slightly roasted and soaked in wine, as a remedy for headache, and in form of infusion as an antisyphilitic. It is also said that they are useful in allaying neuralgic and rheumatic pains.

Bernatzik in his *Handbuch der Arzneivernordnungslehre*, II., p. 74, gives the dose of boldo leaves as 8 to 16 grains several times daily; and that of the oil (which is sometimes used in place of copaiba) as 30 to 60 *drops*. He adds that quantities over 2 *grams* are very apt to produce vomiting.

MISCELLANEOUS CONTRIBUTIONS FROM THE ORIENT.

BY PROF. XAVIER LANDERER, ATHENS, GREECE.

On Labdanum.

The resinous exudation, ladanum or labdanum, from *Cistus ladaniferus* L., *C. Creticus* L., *C. salvifolius* L., *C. villosus* Lamb., was formerly collected by means of a special instrument, called *ladanostirion*, which consisted

Instrument for Collecting Labdanum.

of a rod having at one end three cross-pieces attached to it, and provided with numerous strips of leather. By working this sort of whip about and among the cistus-bushes, the resin adheres to the leather strips, and is afterwards detached and melted. In this condition it is often adulterated with mastic. The accompanying figure illustrates the apparatus in question.

This method of collecting labdanum has for a number of years past been partially replaced by another, and the labdanum at present in the market might with more propriety be specified as *labdanum e barba* ("labdanum from beards"). It is, namely, at present generally collected from the beards and tails of goats and sheep, which are pastured in herds among the cistus bushes, and to which the resin adheres. On transferring such a herd to the shepherd, the contract between the latter and the owner specifies that the shepherd is to collect so many okas of labdanum (from the wool of his animals), or to pay a certain sum in money. The labdanum obtained in Creta has always a spirally twisted shape, that from Cyprus is in sticks. In time of epidemics the inhabitants attach some of this resin to sticks or carry pieces of it in their hands to smell at. While Prof. Landerer was in the island of Posos (in 1837), where he succeeded in eradicating an epidemic by chlorine fumigations, everybody carried such sticks.

On Blatta Orientalis.

Tarakané (or trakane) is the Russian name for *Blatta Laponica*, a species of cockroach. These insects are also called "Preussen" (Prussians) in Russia, and "Russen" (Russians) in Tyrol and southern Germany, being probably carried there by the invading armies during the Seven Years' War. The variety *Blatta orientalis* is found in Greece, and is a great nuisance. For some time past the powdered insect and its preparations have been recommended as remedies in dropsy, and Prof. Landerer made this use of the insect known. He reports, however, that it was found inefficient in dropsy, although it had hydragogue properties.

(To be continued.)

GLYCERITE OF STARCH AS AN EXCIPIENT FOR PILLS.

Sir:—I notice in February New Remedies a note from the A. J. P. on a new pill excipient.

I cannot see that this has any advantages over many of the other excipients which have been recommended. I have tried a great many of them and I have yet to find one giving satisfaction.

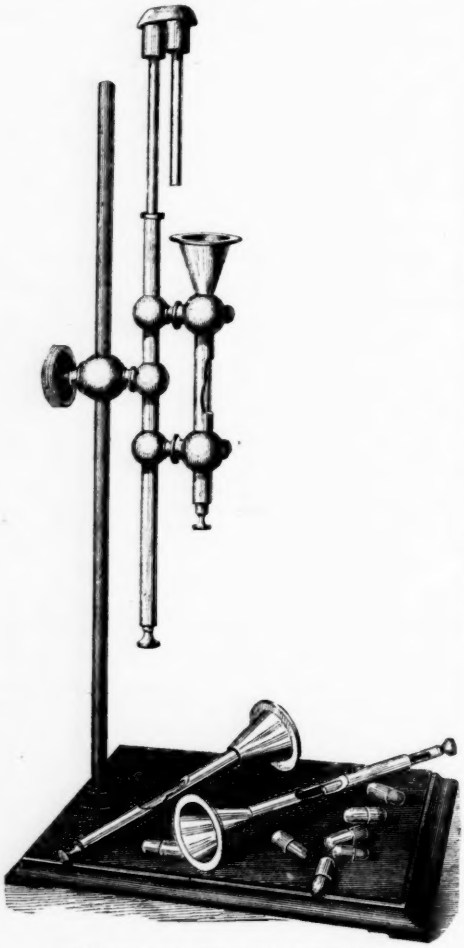
For the past five years I have used the glycerite of starch for this purpose, and have found it *very* satisfactory. It is white, of an unctuous consistence, and therefore convenient to use; it will form any substance, no matter how dry, or contrary, into a firm, tenacious mass, while the glycerin prevents the pill becoming hard. I have not noticed that glycerite of starch has ever been suggested as a pill excipient,* hence I offer it to you for what it is worth. And as the nostrum man would say: "Try it and be convinced of its rare excellence." Yours,

L. C. Hogan.

* It has frequently been mentioned as such.—Ed. New Rem.

A Capsule-Filling and Capping Machine.

An ingenious machine which has quite lately been invented by Mr. Thomas Whitfield, of 240 Wabash Ave., Chicago, will no doubt interest a very large number of our readers, whose experience in filling gelatin capsules is likely to have caused them to wish for something of the sort which would enable them to lessen the time and labor required. The difficulty experienced in



Whitfield's Capsule Filling and Capping Machine.

getting a dry powder packed closely into such small receptacles has generally led to the practice of first converting it into a mass, by which process the advantage of having the remedy in a form which would facilitate its solution in the stomach and intestines may be greatly or quite entirely lost, and it is not unreasonable to think that this contrivance will prove to be a very practical and perfect solution of the whole difficulty. Although composed of a considerable number of parts (over forty), the apparatus is by no means complicated, and it may be very easily and rapidly managed. It is to be attached, as shown in the adjoining illustration, to an ordinary iron filter-stand, and is operated as follows:

The plunger at the bottom of the tube beneath the funnel being drawn down by means of the little knob at its bottom, a capsule cap is placed, mouth upwards, upon its upper end through the aperture in the front of the tube. The hold on the knob being then relaxed, a concealed spring causes the plunger to rise, and the cap is pressed firmly against a shoulder in the tube just below the funnel. The requisite amount of powder is then put into the funnel and falls into the tube. The long portion or body of the capsule is then dropped upon it, mouth downwards, and pressure is next made upon the finger-plate which forms the highest part of the apparatus. This causes a second plunger to descend, and by means of a spiral groove in the sheath through which its guide-rod travels, it is slightly rotated as it descends, until it comes directly over the centre of the funnel and is applied to the rounded base of the capsule; continued pressure rams the capsule home like the charge in a muzzle-loading gun, and the powder is closely packed and the capsule capped by the same movement. The first plunger is now drawn downwards a second time, and the filled capsule drops out. The upper plunger is then allowed to rise (a spiral spring in the sheath of its guide-rod serving to accomplish this), and the machine is ready for another charge.

A set of tubes and plungers are provided, which are adapted for capsules of various sizes (0, 1, 2, 3, and 4 of Planten's scale), and their change is effected in less time than it would take to describe it. The two screws shown at the side of the tube serve to fix the parts firmly together. The price of the complete apparatus (not including the filter-stand) is $15.00, and in view of the excellence of the workmanship (which could not well be better, to judge by the one we have tried), the rapidity of its execution, and the convenience with which medicines can be dispensed and administered when it is used, this will not be found at all excessive.

Elastic Crayons of Nitrate of Silver.

Dr. Pajot takes a laminaria-tent, two millimeters (about $\frac{1}{10}$ inch) in thickness, dips it into thick mucilage, and rolls it into finely powdered lunar caustic. When it dries, it forms a crayon, of the usual thickness of a stick of nitrate of silver, which can be introduced into the cavity of the uterus without fear of breakage. In the same manner, applications can be made to other cavities, and, if necessary, without stronger remedies.—*All. Med. Zeit.*

MORPHIOMETRIC PROCESSES FOR OPIUM.*

BY PROF. ALBERT B. PRESCOTT.

THE following Pharmacopœial Assay Process for Opium is submitted to the Committee of Revision.

Opium, when dried (in powder) at (about) 100° C. (212° F.) until it ceases to lose weight, should yield (from 10 to 12?) per cent of morphia.† The proportion of morphia may be determined by the following process: Take of opium, in powder and dried as above required, 6½ grams (100.3 grains); lime, freshly slaked with one-third its weight of water, 3 grams (46.3 grains); chloride of ammonium, in powder, 4½ grams (69.4 grains); benzole (see list of reagents) 50 cubic centimetres (the volume of 772 grains of water); washed ether (list of reagents), 6 cubic centimetres (the volume of 92 grains of water); distilled water, 70 cubic centimetres (1,080 grains) or a sufficient quantity. Place the opium in a paper filter of 4 inches (10 centimetres) diameter in a small funnel; add benzole to fill and cover the powder, and when the filtrate begins to drop, close the neck of the funnel, and leave to macerate one hour. Then percolate, by adding the remainder of the benzole, and dry the filter and its contents at a gentle heat till the odor of benzole has disappeared. Carefully transfer the contents of the filter (which is to be preserved) to an exactly weighed flask of the capacity of 100 to 120 cubic centimetres, add the lime, with 20 to 30 cubic centimetres of distilled water, agitate for several minutes, then stopper the flask and shake till a uniform mixture is obtained.

Add distilled water, enough to make the contents of the flask weigh 74½ grams (1,149.7 grains). Digest, by immersing the flask in nearly boiling water, with occasional agitation, for one hour. Cool, and add distilled water to restore the exact weight of 74.5 grams. Filter, through the paper-filter previously used, into a test-tube or other cylindrical glass of the capacity of 80 or 90 cubic centimetres, and previously marked for the volume of 50 cubic centimetres (771.6 grains of water), until the filtered liquid reaches the mark. Should the filtrate lack a few drops of the required volume, the filter-contents are gently pressed to bring the liquid to the mark, but in any case no more than this volume is received. To the filtered liquid (now representing 5 grams of the opium) add 8 drops of the benzole and 3 cubic centimetres of the washed ether, then stopper the tube and agitate. Add the chloride of ammonium, and when it has dissolved agitate again, and set aside in a cool place for 3 to 3½ hours. The crystalline deposit is now gathered by filtration in a small filter, previously weighed and moistened, the deposit collected and the filter washed with several portions of distilled water, using but a few drops in each portion. The filter-contents are now dried at about 50° C. (122° F.), washed with the remainder of the washed ether (three cubic centimetres), dried again and weighed.

The weight* represents the morphia in five grams (77.16 grains) of opium. The per cent is found by multiplying the weight in grams by 2, or by dividing the weight in grains by 0.7716.

The Plan of Mohr. The use of lime solution in excess to dissolve morphia from opium or its infusions, and the use of ammonium chloride to neutralize the lime and precipitate the alkaloid—a plan corresponding to the successive use of potassa and ammonium chloride for aluminium separation—has been well approved by the best authorities for the practical assay of opium. It has been adopted in the British Pharmacopœia, with exhaustion of the opium with water before adding the lime, and with acidulation with hydrochloric acid and then evaporation before adding ammonia to throw down the morphia. The addition of a little ether and benzole to hasten the crystallization of the morphia, and especially to prevent the crystals from adhering to the sides of the dish, was recommended by Hager (*Phar. Centralhalle*, p. No. 1 u. 2), and the process so executed was designated Hager's later Process.

Hager directed to deduct one-tenth the weight of the crystalline precipitate for impurities. In view of the fact that some of the narcotina is dissolved by the lime solution, and crystallizes with the morphia, Jacobsen advised to wash the dried crystals with chloroform; this suggestion, with preference of ether instead of chloroform, Hager accepted, directing the deduction of one-thirtieth for impurities. Hager's Jacobsen's process, with the lime solution of five grams of opium all washed through the filter (and consequent concentration of the filtrate) is chosen by Dragendorff, in his "Werthbestimmung stark-wirkender Droguen" (1874), p. 93, as the best

* Paper read at the Twenty-sixth Annual Meeting of the American Phar. Assoc., held at Atlanta, Ga., Nov., 1878.

† I would suggest, as others have done, that opium ought to be limited in maximum, as well as in maximum strength.

The Pharmacopœia can hardly depend upon commercial interest always to carry over-rich opium to the morphia manufacturers. But I am not confident as to what limits should be fixed, and it seems to me that a requirement permitting a variation of only 2 per cent is more strict than can be enforced.

* Hager (after Jacobsen) directs to substract from this weight its one-thirtieth for impurities (not removed by ether washings of the morphia prec.). In his process, however, there is no treatment of the opium with benzole. This treatment with benzole lessens the impurities of the morphia weighed, and probably wastes some morphia (not over $\frac{1}{300}$ of the weight of the benzole used). The subtraction of one-thirtieth is more fully discussed farther on.

process for practical uses, and only second to Schacht's process with correction by amyl alcohol extraction and volumetric estimation, for a method of greatest exactness. Then Hager devised the improvement of taking six and a half grams of opium, and having sixty-five grams of water in the lime solution, taking the first fifty grams of filtrate to represent five grams of the opium, thereby *avoiding the washing of the filter and the concentration of the filtrate*, saving the morphia from waste by wet and heat, and shortening the operation. This form of Hager-Jacobsen's process is given in Hager's "Untersuchungen," II., 176; also in Hoffman's "Examination of Medicinal Chemicals, p. 268.

I submit the process very nearly as given in the two works last named, but with addition of the preliminary treatment with benzole, for the consideration of the Committee of Revision.*

With the desire to contribute some proof of the comparative exactness of different processes of morphiometric assay, I have instituted a series of comparative trials, each process being applied in turn to each one of a set of samples of opium, holding the conditions as nearly parallel as possible.

Then as a test of each result, the purity of the morphia was estimated volumetrically by Mayer's solution, and the morphia remaining uncrystallized in the mother liquor was sought to be extracted by amyl alcohol and estimated volumetrically — these means of correction, the one against overvalue and the other against undervalue, being essentially those which were proposed and used by Dragendorff, in his "Werthbestimmung starkwirkender Droguen." All the operations here reported were intrusted to the execution of Mr. Henry Stecher,† and I desire to acknowledge, still farther, the benefit of his counsel, in conducting the work throughout the investigation.

The following-named processes were tried:

A. The process here proposed for the U. S. P. Hager-Jacobsen's, with a preliminary treatment of the opium with a limited quantity of cold benzole.

B. The same, Hager-Jacobsen's process, modified in treatment of the opium at the start with a sufficient quantity of hot benzole.

C. Hager-Jacobsen's process, as given by Hager, without initiatory treatment of the opium with benzole; the results being taken before as well as after washing the morphia with ether.

D. Proctor's Staples' process (Am. Phar. Asso. Proceed., 1870, p. 130), the plan of the preparation of morphia by U. S. P., 1870, with initiatory treatment of the opium with benzole.

E. Schachtrupp's process for estimation of morphia and narcotina (*Zeitschrift für analyt. Chemie*, 1868, vii., 509). The plan of this method consists in exhaustion of the opium, made alkaline and dried with hot benzole; the benzole solution being evaporated and its residue dissolved in acidulated water and titrated with Mayer's solution, for narcotina, when the benzole-washed opium is exhausted with amyl alcohol, this solution evaporated and its residue taken up in acidulated water, and ammonia added, for the crystallization of the morphia, which is estimated gravimetrically. The morphia gravimetric results of this process, as of the others, were submitted to volumetric trial.

Four of the samples of opium used were obtained at different drug stores in Ann Arbor, and one was taken from the laboratory stock, all being "powdered opium." The samples were all dried at 100° C., till drying ceased to diminish the weight. Except for process C, only four samples were worked in the trial of each process.

A. The process proposed by the writer, for the U. S. P. as described at the beginning of this paper, Hager-Jacobsen's process, with initiatory treatment of the opium with a limited quantity of benzole, not heated. The results represent 5 grams of opium (6.5 grams being taken), as the directions stipulate. Corrections were undertaken by volumetric estimation of the precipitates, and also of the amyl alcohol extract of the filtrates, with Mayer's solution of potassium mercuric iodide, as described in detail below:

PROCESS A. PERCENTAGES.

	No. 1.	No. 2.	No. 3.	No. 4.	Mean.
a. Crystalline precipitate of crude morphia,*	12.20	13.10	12.32	12.05	12.42
b. Ether-washed morphia.....	10.74	11.94	11.84	11.68	11.55
c. By estimating *b* with Mayer's sol.	7.40	8.80	8.48	8.80	8.37
d. From filtrate, by amyl alcohol and Mayer's sol	2.12	1.92	2.76	3.21	2.50
e. Total morphia by Mayer's sol. (*c* + *d*)	9.52	10.72	11.24	12.01	10.87
f. Subtracting from *b* $\frac{1}{50}$ (Jacobsen) ..	10.38	11.54	11.44	11.29	11.16
g. Subtracting from *a* $\frac{1}{10}$ (Hager),† ...	10.98	11.79	11.09	10.85	10.18

* A strong approval of Hager-Jacobsen's process, by Dr. Schlosser, is given in the *Am. Journ. Phar.*, 1871, p. 224.

† Mr. Stecher has been Assistant in the Chemical Laboratory at Michigan University: his present address is Minneapolis, Minn., care of Gray & Hofflin.

* The weights of these precipitates were respectively for the four samples, 1st, 0.610; 2d, 0.653; 3d, 0.616; 4th, 0.6025 grams.

† Hager's direction to subtract $\frac{1}{10}$ from the crude precipitate and take the remainder for morphia, as well as Jacobsen's direction, accepted by Hager, to subtract $\frac{1}{50}$ from the ether-washed precipitate and take the remainder as the morphia, were both given for processes without initiatory benzole-washing of the opium.

The quantities of benzole used upon the opium in this series of trials were larger than the directions specify, being for No. 1, 100 cc.; for No. 2, 80 cc.; for No. 4, 70 cc. Even these quantities did not complete the removal of color by the benzole, the last portions being still slightly colored. The reason for restricting the quantity of benzole, and using it cold, is given under Process B.

For *estimation with Mayer's solution* (the volumetric potassium-mercuric iodide), the precipitates were dissolved in sulphuric acidulated water and so diluted that, at the final reaction in titrating, the solution should be about 200 parts to 1 part of morphia (as Dragendorff advises). Mayer's solution* is made by dissolving 13.55 grams mercuric chloride, and 49.84 grams potassium iodide, both strictly dry, in water to make 1 litre. The solution is, therefore, twentieth normal (old decinormal) of $HgCl_2+6KI$. Mayer gave the value of 1 cc. of the solution as 0.020 of alkaloid. Dragendorff reports trials giving (in solutions of 200 to 1) 0.0224, and 0.0221 of crystallized morphia, and of morphia dried at 120° C., 0.0191, and 0.0205—respectively for 1 cc. The precipitate is not insoluble in water; therefore a uniform dilution of 200 to 1 is advised. If four molecules of morphia salt react with three molecules of the iodomercurate ($[KI]_2HgI_2+2KI$?), then 0.0202 should be the value of 1 cc. of the solution, in crystallized morphia, $C_{17}H_{19}NO_3.H_2O=303$, no allowance being made for the solubility of the precipitate in water. Dragendorff has stated that the precipitate was visible in a solution of morphia salt in 2,500 parts of water. From all the evidence at command and some trials with crystallized morphia, I believe that titration of morphia with Mayer's solution, at 0.020 alkaloid to the cc., gives results certainly not too high, and possibly a little too low; also that these results of titration are closer than can be obtained gravimetrically by methods of purification of the crystals. Nevertheless, more investigation is needed as to the conditions of accuracy in titrating with Mayer's solution. The final reaction was found by patiently waiting for the precipitate to subside after each addition liable to be final, then taking a drop with a glass rod upon a glass plate, resting on black color, and adding thereto a drop from the burette. If a precipitate appears, these drops are rinsed from the glass plate, into the solution, with a drop or two of water.

In undertaking to exhaust the mother liquid (the filtrates) of their remaining morphia,† the following plan, after Dragendorff, was adopted: The crude morphia was filtered out at the time specified by the process, and the filtrate set aside some time longer, for additional crystallization of morphia. The precipitate so obtained was filtered out, washed slightly with water, dried and washed with ether, dissolved in sulphuric acidulated water, and titrated with Mayer's solution. The opium filtrate (from the morphia precipitate) was then shaken in a large test-tube with amyl alcohol, and the separated alcohol removed, three portions respectively of 15, 10, and 5 cub. centimetres of amyl alcohol being so applied. The united amylic solutions were then evaporated to dryness, the residue dissolved in sulphuric acidulated water, and this solution titrated with Mayer's solution. The following results were obtained: In the work with Nos. 1 and 2 after treatment with ammonium chloride, the solutions were left 12 hours, and in Nos. 3 and 4, 4 hours instead of the "3 to 3½ hours" of the process, for the precipitate to form.*

SUPPLEMENTARY TO PROCESS A. PERCENTAGES.

	No. 1.	No. 2.	No. 3.	No. 4.	Mean.
a. Additional precipitates estimated by Mayer's sol.....	0.36	0.20	0.80	0.28	0.41
b. From last filt., by am. alc., and Mayer's sol.....	1.76	1.72	1.96	2.93	2.09
c. Total aditional as given in A, *d*.....	2.12	1.92	2.76	3.21	2.50

(To be continued.)

* F. F. Mayer: Pro. Am. Phar. Asso., 1862, x. 238; *Am. Journ. Phar.*, 1863, xxxv., 20; *Chem. News*, 1863, 159.

George Dragendorff: Werthbestimmung starkwirkender Droguen (1874), 9; Gerichtlich-chemische Ermittelung von Giften (1868), 227.

† The solubility of morphia in pure water is about 1 milligram to one cubic centimetre, and Cleaver (*Pharm. Journ. and Trans.*, vii., 243, 1876). advises to add to the weight of purified morphia crystals, one-thousandth of the weight of all the water of the morphia liquors and washings, to compensate for the morphia so held in solution. It is of interest to note that this correction with the fifty grams of mother-liquor in the Hager-Jacobsen process just makes $\frac{1}{10}$ the morphia of U. S. P. standard opium: the correction formerly advised by Hager to be deducted for impurities (see result *g* of Process A, above). But it has been clearly shown that opium mother-waters, even when non-alcoholic, dissolve more morphia than pure water does. Cleaver states that "solutions of opium from which the morphia has been precipitated, if allowed to stand until the smell of ammonia has disappeared, will redissolve large quantities of morphia." If, however, much excess of ammonia is left in the liquid, the amount of dissolved morphia is still greater.—*Pharm. Journ.*, 1876, vii., 242.

* Dragendorff reports from Mr. Fricker's work (Werthbestimmung, 92):

1. Morphia by Hager's Process, 5.9%; by 3 days' cryst., 0.3%; by amyl alc., 1.06%.
2. Morphia by Hager's Process, 5.8%; by 3 days' cryst., 0.85%; by amyl alc., 0.73%.
3. Morphia by Hager's Process, 7.3%; by 3 days' cyst., 1.27%; by amyl alc., 0.56%.
4. Morphia by Hager's Process, 6.24%; by 3 days' cryst., 0.80%; by amyl alc., 0.46%.
5. Morphia by Hager's Process, 0.38%; by 3 days' cryst., 0.07%; by amyl alc., 0.62%.

Microscopic Examination of Triturated Metallic and Other Hard Substances.

THE practically unlimited divisibility of material substances, by continued trituration, especially in presence of an inert substance, such as milk-sugar, has always been one of the fundamental claims of the homœopathic school of physicians. Starting from this hypothesis, the dilution of matter was carried to such a degree that the mind becomes incapable of conceiving the smallness of the particles which may be supposed to be present in the higher triturations. Experiments have heretofore been made by several investigators, to arrive at a definite knowledge of the degree of the division of some of the remedies used in homœopathic practice, among which the observations of Dr. Mayrhofer* have perhaps the most merit. But all these experiments are more or less fallacious, either from inaccurate observations, or from the unsuspected interference of other substances, or else from the want of an unbiased judgment. The theory that the higher triturations, even of difficultly soluble or practically insoluble substances, facilitate or actually *effect* their *solubility*, had been assumed by Hahnemann to be a fact without dispute, so that even teachers of authority establish the rule that dilutions (or dilute solutions) should be made from the third trituration.

In view of this state of affairs, exact experiments, free from bias and prejudice, are extremely welcome, and it is with satisfaction that we have read a pamphlet on this subject from the pen of Dr. C. Wesselhöft, in Boston,† whose statements should have the more weight as he is a follower of the homœopathic school himself. This author arrives at results which are totally at variance with the theory, as will be seen hereafter. We abstract the most interesting portions of his pamphlet in the following:

The chief obstacle in the examination of homœopathic triturations is the sugar of milk. It can only be removed with the greatest difficulty. Being but little and only slowly soluble in water and very prone to crystallization, its presence often causes doubt to the untrained eye, whether a certain shining particle observed under the microscope is a metallic speck or a fragment of milk-sugar. The best way to conquer this enemy is to study it thoroughly, so as to be able to recognize it under all possible conditions. If we have a trituration of heavy metallic substances, as lead, gold, copper, etc., the milk-sugar may be removed by washing and elutriation. For this purpose one grain of the trituration is dissolved in a watchglass half full of water, by very careful warming. The metallic particles are then deposited at the bottom, and the solution may be removed with a pipette, or better, with thick filtering paper. This process must be continued from 25 to 30 times, but, nevertheless, small crystals of milk-sugar often still remain, while at the same time some of the metallic particles are lost.

In examining specifically light substances, such as carbon, this method of washing is useless. The best way to make the particles of such bodies visible is to place a fraction of a grain of the trituration on an object-glass, to add a drop or two of water, and to warm the glass gently over a flame, until a clear solution has resulted, which is to be gradually dried. This gradual drying brings the sugar of milk into a vitreous, perfectly transparent condition, which lasts as long as the water of crystallization remains in the mass. During this period a good view may be obtained of the foreign, opaque particles imbedded in it. This glassy condition may continue for several days, after which the sugar crystallizes in white, generally opaque bundles.

Another very good method to examine opaque particles consists in the use of ordinary, good, white filter paper. The fibres of this appear under the microscope white and semi-transparent, and although much interlaced, they still permit the ready passage of light. Any carbonaceous or metallic particles absorbed by it may thus be readily seen, while the sugar of milk is in this manner completely gotten rid of. If more light is wanted, a small piece of the paper is placed on an object-glass and saturated with Canada balsam, which makes the fibres completely transparent. Canada balsam is altogether indispensable in these examinations. A crystalline mass of milk-sugar mixed with opaque particles may, by its aid, in most cases be made transparent, and the gloss of the sugar crystals at the same time destroyed, so that any foreign fragments are easily distinguished. The balsam also serves to prevent the caking and adhering together of minute particles, which is unavoidable when making aqueous solutions of metallic triturations, and thereby interferes with the correct measurement of the particles. Earlier investigations have suffered much from this error. The best method of using the balsam is to mix it with the pure substance itself, in form of precipitate or fine powder, without the presence of milk-sugar. The latter, if originally present, must be removed by washing, and the remaining powder dried. A small quantity of this powder is then transferred to an object-glass, a drop of balsam placed on it, the whole well rubbed with the rounded end of a glass-rod, covered with thin glass and examined. The particles will then be seen evenly distributed, and will appear singly, with fine metallic lustre by reflected light.

The use of the microscope in these investigations requires no modification from the usual methods. High powers are not at all necessary,

* Oesterr. Zeitsch. f. Homœop., I., 1844, p. 152.

† *Mikroskopische Untersuchungen verriebener Metalle und anderer harter unlöslicher Substanzen.* Von Dr. C. Wesselhöft, in Boston. In: *Sammlung wissenschaftl. Abhandl. aus d. Geb. d. Homœopathie*, 1, No. 3. Leipzig, 1878.

as a *magnifying power of* 100 *is already sufficient to recognize the minutest particles which may be produced by trituration.* Higher powers, however, are required for making measurements, or to obtain proof of the identity of a substance. It may appear surprising that comparatively low powers are sufficient for this purpose, in view of the commonly prevailing theory of the extraordinary comminution and dissociation ("Vergeistigung") produced by protracted trituration. Experienced microscopists recognize the value of medium powers with transmitted light in examining transparent substances. The same is the case, in still higher degree, when examining opaque objects. Much smaller particles of the latter may be recognized with reflected (superior) than with transmitted (inferior) light.

The author of the paper proposed to examine chiefly the following questions:

1. Does continued trituration of hard insoluble substances produce a progressively finer comminution and division, taking in consideration the proportion of the milk-sugar and the time consumed in triturating them?

2. Do these triturated particles become soluble, as it has been supposed hitherto; and can they be recognized in solution prepared from the third trituration?

3. May the pathogenetic, as well as the curative effects of these substances be explained, considering the attainable limits of comminution?

The author now gives the details of his experiments on various substances, the results of which are summarized in the following:

Carbo, Wood-charcoal.

a. First Centesimal Trituration.* It was found that the smallest particles could be recognized with a power of 100 diam. The largest had a diameter of about $\frac{1}{40}$ mm.,† the smallest $\frac{1}{1000}$ to $\frac{1}{12000}$ mm.

b. The Second Centesimal Trituration exhibited a much smaller number of particles. Still they were easily recognizable, but were found to differ much more in size. The largest measured $\frac{1}{300}$ mm., but none were found smaller than $\frac{1}{12000}$ mm. This fact was established by several repeated observations, with various modifications.

c. The Third Centesimal offered more difficulties. A large number of samples had to be examined before a single carbon particle could be found. After many futile trials, and only by careful and patient search, it was ascertained that carbon particles *are* present in this trituration, perhaps *one* or *two* in the field of vision. They are imbedded in milk-sugar crystals, in which they may be plainly recognized by examining them alternately with transmitted and reflected light. The largest were found to be $\frac{1}{600}$ smaller mm. in diameter, and none were found than $\frac{1}{20000}$ mm.

As this result was somewhat unexpected, about a drachm of ordinary wood-charcoal was triturated, without milk-sugar, for three-quarters of an hour. A small quantity of this, mixed with balsam and examined under the microscope, showed that the largest particles measured $\frac{1}{180}$ mm., the smallest $\frac{1}{20000}$ mm.

In order to see if further trituration would diminish the size of the particles, a quantity of charcoal was triturated with an equal quantity of milk-sugar with a triturating machine for *thirty* hours. Samples of this on examination showed that the largest particles measured $\frac{1}{25}$ mm., the smallest $\frac{3}{20000}$ or nearly $\frac{1}{7000}$ mm.

Gold.—Triturations of *gold-leaf* of the third centesimal were found to contain particles of gold not smaller than $\frac{1}{50}$ mm. A special mixture of 1 part of gold-leaf and 4 parts of milk-sugar on trituration was found to contain particles of gold not larger than $\frac{1}{25}$ mm., nor smaller than $\frac{1}{4000}$ mm. Five further triturations were then prepared from this and even in the sixth the particles of gold were still found to vary between $\frac{1}{25}$ and $\frac{1}{4000}$ mm., none smaller being observed.

Precipitated gola admits of a higher division. In the first, and even in the second centesimal the diameter of the gold particles varied equally between $\frac{1}{600}$ and $\frac{1}{18000}$ mm.

Iron and *silica* exhibit the same characteristics after trituration as the above mentioned substances.

Copper.—Samples of precipitated copper examined in the same manner were found to contain particles varying in diameter between $\frac{1}{1000}$ and $\frac{1}{12000}$ mm. The author here calls special attention to a possible objection which might be made, namely, that some particles may have been titurated so finely that its atoms may not be recognizable under the lens. This objection is answered by the fact that the same samples being examined in the intervals between repeated triturations, exhibited metallic particles of the same size and of the same average number as before.

Lead.—This is capable of further division than the previously mentioned metals. The largest particles measured $\frac{1}{250}$, the smallest $\frac{1}{3000}$

* One part of a substance triturated with 99 parts milk-sugar, under the observances of certain rules, constitutes the first centesimal trituation (sometimes called the second decimal). 100 parts of this contain 1 part of the substance.

One part of the first centesimal triturated with 99 parts of milk-sugar produces the second centesimal (or fourth decimal) trituration. 10,000 parts of this contain 1 part of the substance.

One part of the second centesimal triturated with 99 parts of milk-sugar produces the third centesimal (or sixth decimal) trituration. 1,000,000 parts of this contain 1 part of the substance, and so forth.

Hahnemann teaches that "*all* remedial substances triturated (according to his directions) up to the third centesimal, become soluble in water and in alcohol, a fact which is unknown to chemistry," etc. See *Pharmac. homœop. polygl.*, p. 38.

† 1 millimetre = 0.039 inches. 1 inch = 25.5 mm.

mm. But it was also noticed that the limit of divisibility is reached already in the first trituration.

Mercury.—On triturating this metal with much milk-sugar, no matter how long, the product will be found to contain comparatively large globules of mercury. On making a solution of such a trituration, the metal unites into larger drops. But if a minute drop of mercury, about the size of a pin's head, be rubbed for a few minutes in a watchglass with Canada balsam, and a small sample placed on an object glass be further stirred for some time, the particles of mercury will be found to be extremely small. They will appear under a low power of the microscope like a whitish cloud, almost appearing like the milky way in a starlit night. By higher powers the particles may be separately recognized, and when measured, will be found to vary in diameter from $\frac{1}{3000}$ to $\frac{1}{4000}$ mm. Oil and glycerin are likewise good vehicles, but none is as good as the balsam.

The result of all these experiments and observations is, that, contrary to the hitherto prevailing opinion, metallic and other hard insoluble substances cannot be subdivided by continued trituration beyond a certain limit. If these bodies were originally in the state of fine powder, rubbing with milk-sugar does not further divide them. In most other cases, the subdivision of particles ceases after the first trituration. The limit of divisibility depends on the proportion of the milk-sugar. The smaller a quantity of the latter is used the further may the comminution be carried. In centesimal triturations (1 of substance and 99 of milk-sugar) the effort of the pestle is mainly confined to the sugar, while the foreign substance receives but little of the power employed.

It has formerly been held that in high triturations, owing to the excessively fine state in which these bodies are present, they become completely soluble in alcohol or water. This theory must evidently be abandoned in view of the results above obtained. The author of the paper, who himself makes this announcement, further concludes that no particles of the original substance could be present in any trituration higher than the third centesimal. Hence it is impossible to make "dilutions" from such higher triturations.

As to the alleged pathogenetic or curative effects of the latter, the author acknowledges that there is great uncertainty. While it is perfectly certain that neither copper nor gold could be present in *any* dilution beyond the fifth, it is equally certain, says the author, that he obtained in sixteen healthy persons, *without any medicinal agent*, 919 different symptoms which certainly would have been recorded as "proofings" in the materia medica, if the experiments had been conducted in the usual manner. He advocates the total cancellation of all so-called "proofings" made with such dilutions as the 12th, and over (up to the 200th) as not being based on the presence of a material substance, without which no effects can be expected.

Apparatus for Extracting Oil of Lemon.

THERE are several methods in use for extracting the essential oil from the rind of lemons, which are generally known as the sponge process, and the écuelle process, besides distillation, The sponge process consists mainly in pressing slices of the rind of the fruit against a bit of sponge wound around the forefinger of the left hand in such a manner, that the oil is forced from the cells situated near the exterior surface, and absorbed by the sponge, while, at the same time, care is taken to avoid pressing the pulp.* The écuelle process has received its name from the fact that a peculiar vessel, termed *écuelle*, is the principal instrument used for rupturing the oil-cells. This vessel is a shallow basin with a lip on one side for pouring, the bottom of which is provided with a number of stout, sharp brass pins about half an inch long, while the centre of the bottom is deepened into a tube about one inch in diameter, and five inches long, closed at its lower end.

The process of distillation, which was formerly applied only to irregular or damaged fruits or to the residues left by the previously described processes, generally yielded an inferior product, which was sold at a low price.

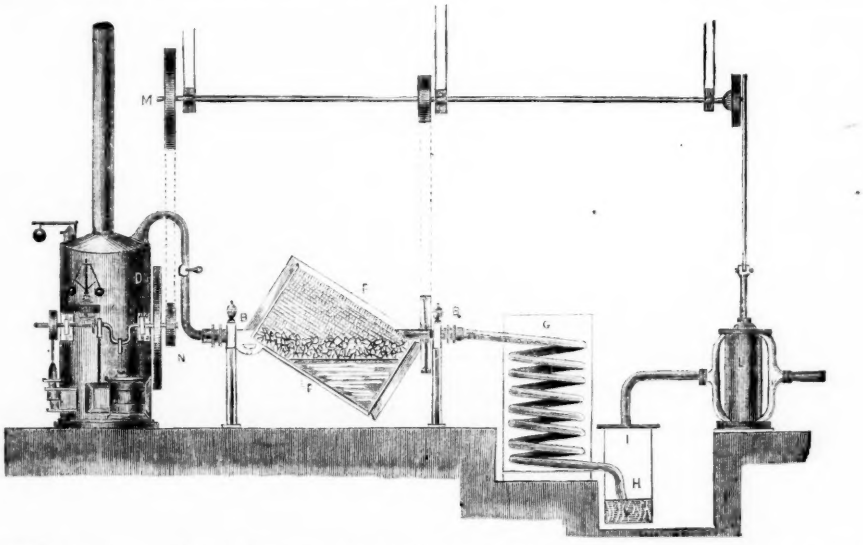
The sponge process is in use only in southern Italy and in Sicily, while the écuelle process is used exclusively in southern France. During the last few years, various interested persons in southern Italy have constructed apparatus which was intended to replace the manual by mechanical labor. The lemon press of Fonsio, Oliveri, and Datto at Palermo is said to be a very great improvement over the old process, but that which appears to offer the greatest advantages, and which has been in use for about four years, is an apparatus constructed by Domenico Monfalcone, a description and illustration of which

*See *Pharmacographia*, p. 106. Also particularly described in *Alfonso, Prof. F., Trattato sulla Coltivazione degli Agrumi*, p. 327, from which we have taken the description and illustration of the apparatus.

we herewith place before our readers.* The apparatus is called in Italian, *strizzatore termo-pneumatico* (thermo-pneumatic extractor).

A is a hollow cylinder of sheet-iron, the interior surface of which is studded with a large number of small metallic knife-points. This cylinder revolves on two axles attached to it at diagonally opposite points. Its capacity is such that, when half charged, as indicated in the cut, it is capable of holding 1,200 to 1,500 lemons.

If the apparatus is to be used, as intended by the inventor, for the extraction of oil of orange, limes, and bergamot, which vary considerably in size, it will of course require a larger or smaller number of the latter fruits to half fill it. The cylinder having been properly charged, say with the above-stated amount of lemons, together with a small quantity of water, it is set in motion by aid of the shafting and pulleys driven by the small steam-engine. The fruits are thereby made to come in contact with the metallic lancets, and their whole surface gradually becomes punctured sufficiently to cut or rupture the cells containing the essential oil, which escapes. The cylinder *A*, which corresponds in principle to the écuelle used in French factories, has double walls, the space between them being intended for the circulation of a current of steam which is admitted to heat the water and to facilitate the extraction of the oil, while, at the same time, the vapors are rarefied or aspirated by the vacuum-pump *L*. The axles of the cylinder on both sides are hollow; that on the side looking towards the engine is imbedded in such a manner that steam from the boiler *D* may be admitted at will, either in the double walls of the cylinder or into the interior of the cylinder itself, while the hollow passage in the other axle communicates with a condensing worm *G*, the outlet of which, *H*, descends into a cylindrical vessel, *I*, intended to receive the condensed products, consisting of water and essential oil. When the apparatus is first set in motion, the pump *L* begins to produce a vacuum during the first revolutions of the cylinder. Steam being now cautiously admitted into the double walls of the cylinder, the water is raised to boiling at a comparatively low temperature and the vapors charged with the essential oil rapidly pass over into the receptacle, where they separate into two layers. The product obtained by this process is said to be equal in quality to that obtained by mechanical means. With a two-horse power engine and a boiler designed for a five horse-power engine, five such apparatuses (*cilindri punzecchiatori*)



may be driven at once, each of which is capable of extracting 1,200–1,500 lemons in three-quarters of an hour, including the time required for charging and emptying it. At the same time the yield is almost double of that obtained by the manual process. A workman using the old sponge process can extract not more than about 2,300 lemons in a working day of ten hours, receiving therefor 1.70 lire (32 cents). This quantity of fruits yields on an average two pounds of essential oil. But five steam extractors can work up in the same time 140,000 lemons and the yield is relatively double.

During the months of November to March, the average yield from 1,000 lemons in the factories of Palermo is 320 grams of essential oil; in those of Messina, where a better quality of fruit is employed, the yield is about 400 grams. The same number of lemons yields about 40 litres (10 gall.)

*First published in *Giornale Agrario Italiano*, ed. by Prof. Carega in Murice, and printed in Forli.

of acid juice, which represents a net profit of 4 lire (77 cents). Of course the collection of the juice is a necessary accompaniment of the manufacture of essential oil.

During the year 1872, the following quantities of essential oils of the Citrus family were exported :

Exported to	From Palermo.	From Messina.
France	3,768 kilos.	39,549 kilos.
Germany	—	6,859 "
Holland	298 "	4,887 "
Belgium	—	5,431 "
England	18,321 "	96,750 "
Austria	9,156 "	62,909 "
Turkey	—	10,700 "
America	225 "	72,000 "
Russia	—	1,819 "
Denmark	—	1,492 "
Greece	—	640 "
	31,768 kilos.	303,036 kilos.

To show the fluctuation of the American imports, the following table is appended :

Exports of essential Oils to the U. S., in kilos.

	1868	86 9	1870	1871	1872
From Palermo.	3,436	2,890	1,145	2,794	225
From Messina.	31,946	27,792	67,686	28,706	72,000

Our chief object in bringing before our readers the description of the above apparatus, is to suggest to some enterprising American a method by which the essential oils of the Citrus family may be extracted to advantage in the Southern States. The apparatus in question is, no doubt, capable of much improvement, and there is no other country in the world so likely to produce the best adapted machinery as the United States.

Castor Oil Pills.

QUERIES have been frequently put to the editors of various medical and pharmaceutical journals as to the existence of a formula for "Castor Oil Pills," but the answer usually has been that castor oil cannot be given in the form of a pill unless in very large doses, which would be too absurd to warrant their being prescribed, and that those sold under that name were probably "compound rhubarb pills," or some other mild aperient pill. However, there is a formula which might not inappropriately be called and sold under the name of "Castor Oil Pills."

Castor oil was some years ago suggested by Mr. Remmington for the manufacture of a pure medicinal soap. The subject has since been carried further by M. Giffard, who contributed a paper to the *Bulletin des Travaux de la Société de Pharmacie de Main-et-Loire* for 1877, on the saponification of castor oil, and its therapeutic applications.

From his experiments on the internal administration of the *ricinolate of magnesium* arises the suggestion we now make. M. Giffard states that "it acts as *a gentle laxative which might be used in constipation.* As its soft consistence does not allow of its being made into pills without some addition, M. Giffard used powdered rhubarb. It then forms a *moderate purgative which does not produce colic or the least intestinal irritation.*"

Here, then, is the therapeutical property of castor oil contained in a pillular form, and could easily be regulated in activity by the addition of any purgative drug in a powder form which has no drastic or irritating property.

The ricinolate of magnesium is prepared by double decomposition, by pouring a neutral solution of an *alkaline ricinolate* into a solution of sulphate of magnesium. The white curdy precipitate that forms is washed several times on a filter or cloth. This ricinolate melts at 50° C. and is insoluble in water, but soluble in alcohol, ether, and chloroform. From the alcoholic and ethereal solutions, when allowed to evaporate slowly, it is deposited in silky crystalline needles.

The alkaline ricinolates of potassium and sodium are obtained very readily, being produced by simple contact of the oil with strong lye. The potash soap is soft, and resembles glycerole of starch. The soda soap is opaque white, and possesses the characteristic unctuosity in a marked degree. It could most advantageously be substituted for ordinary soap as an excipient in purgative pills, especially those of aloes. When triturated in a mortar it softens, and can be readily incorporated with powders, forming a mass of good consistence.—*The Monthly Mag. of Pharm.*

Olive Oil at the late Paris Exhibition.

OLIVE oil was immeasurably the most important alimentary oil shown in the exhibition, most of the others, such as poppy oil, sesame oil, walnut oil, and groundnut oil, having been already sufficiently referred to in previous reports (NEW REM., 1878, 309, etc). Thus there were 330 French exhibitors of olive oil, 300 Spanish, 200 Portuguese, and 60 Algerian, besides other nationalities—upwards of one thousand altogether. One of the most interesting exhibits was some oil of very good quality that came from South Australia.

In France, olive oil for food is prepared principally in Languedoc, Provence, and Corsica, from picked olives which are usually crushed with the stones. The annual consumption of edible oils in France is estimated at between eight and nine million gallons, of which nearly one-tenth is used in Paris, including a quarter of a million gallons of olive oil.

In Algeria, the olive oil industry is extending. The olive tree grows wild in many parts of the colony, and in some places the natives have sought to improve the quality of the oil by graft-

ing, but through defective manufacture only an inferior oil is obtained. Some factories conducted by Europeans have been established, however, in the principal centres of production, particularly at Tlemcen and in Kabylia, where oil is produced that is largely exported. The qualities sent out are as follows.

Oil from green olives.—This kind retains for several months a rather disagreeable taste, but after it has deposited some chlorophyll and other substances that pass into it during expression, and it has been filtered, it acquires a good flavor.

Oil from half-ripe olives.—This kind is made in January and during part of February. It has a flavor of the fruit, but without bitterness, but is not so sweet as the preceding, to which it is inferior.

Oil from ripe olives.—Made in February, March, and April: It is a light, sweet oil, said to be without any taste of the fruit and to be much sought after in the north of Europe.

Huile d'Enfer.—Obtained from the water with which the residue from the pressing is boiled.

Ressences.—Obtained by trituration of the olive stones and used in soap making.

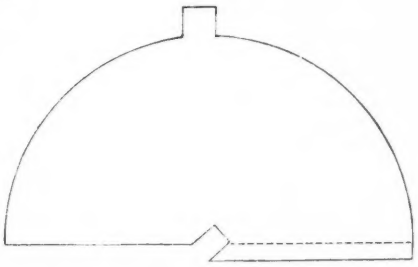
A large quantity of French olive oil is, however, imported into Algeria, to suit the palate of the European residents there, the native oil almost always having more or less of the flavor of the fruit.—*Pharm. Journ.*, Dec. 14th.

Ostrich Pepsine.

M. ALFRED EBELOT, in an article in the *Revue des Deux Mondes*, on the means employed in the Argentine Republic to protect settlers in the Pampas from the Indians, gives some curious statements with regard to ostrich pepsine. The soldiers never could resist an ostrich hunt when they saw a male ostrich, as is the custom of that bird, taking out its young brood for food and exercise. The parent bird generally escaped, leaving its young in the hands of its enemies. When other food was scarce, they ate the young ostriches. Some portions of the flesh of these birds when young and fat are reckoned dainty by the Indians. Whilst eating the ostrich, the Indians always carefully put aside the stomach in order to collect the pepsine which it contains. "The stomach of the ostrich," says M. Ebelot, "is celebrated for its incredible powers of digestion. The abundance of pepsine, to which it owes this faculty, has created among the Indians a curious commercial fraud. They dry it and sell it literally for its weight in gold. It is used for the purpose of restoring worn out stomachs." A London medical journal says: "We think 'ostrich pepsine' such a splendid name for business purposes that we wonder it has never been adopted. The pepsine of the pig would have no chance in competition with that of the ostrich, and no great city dinner or regimental mess would be complete without a supply of this infallible specific, '*pour refaire les estomacs délabrés.*'"

PLATINUM-CONE FILTERS FOR RAPID FILTRATION.

MR. HENRY B. PARSONS has sent us a communication respecting Gooch's filter-cones described in the last October number of this journal. Being desirous of trying the method there described, but having nothing but platinum foil, he made a cone which, when spread out, has the shape illustrated in the accompanying figure. The little projection on the cone is convenient for handling with the forceps. He has given these cones a thorough trial and finds them as reliable and often more convenient than paper filters.



In making the platinum cone, it is best to pierce it with pinholes from *without* and *before folding the edges together*. The cone works well when fitted into a 60° funnel by aid of one or two wetted filter papers which are placed between it and the funnel. He writes regarding its use:

"I have found that moderately coarse, acid-washed asbestos is better than that which is very fine.

"I do not use the cone very much for barium or calcium sulphates, and such precipitates, but find it the best thing for magnesium pyrophosphate, and precipitates which are ordinarily dried on tared filters. For instance, a precipitate of berberina with platinic chloride weighed .0634 in the cone; after ignition the remaining Pt weighed .0187=.06355 of berberina. With tared filters such results can seldom be had."

Note on the Administration of Phosphorus.

THE following letter of Dr. J. Ashburton Thompson, printed in the *Brit. Med. Journ.* of Dec. 21st, contains some valuable hints on the administration of phosphorus:

"My attention has been drawn to a paragraph in Dr. W. H. Day's clinical lecture on 'Some Points in the Pathology and Treatment of Headache' (*British Medical Journal*, Nov. 16th, 1878), in which he says that 'no remedy requires more care in prescribing than this (phosphorus); for, whilst in small doses it is a gentle stimulant and tonic, in large doses it depresses the heart's action, like chloral, and is not free from danger.' I inquired of the author under what circumstances he had made an observation contradictory to all, I believe, that has been hitherto

published of the action of this drug. From the reply with which Dr. Day favors me, and which I have his permission to quote, it appears that, having given to a man aged 62 two doses of phosphorus *per diem* of one-thirty-second of a grain each, and to a younger man one dose *per diem* of one-sixteenth of a grain, both patients suffered from nausea, epigastric discomforts, and depression, in addition to the symptoms already referred to. Upon further inquiry, I ascertained that the form in which the medicine was administered in these cases was that of *perles*, which contain a solution of phosphorus in almond oil. In a work which I published in 1874 (*Free Phosphorus in Medicine*), I described these symptoms; referred them to the use of phosphorus dissolved in almond or olive-oil, and showed how they may be avoided by substituting ether, alcohol with glycerin, or cod-liver oil for those solvents, at the same time that the physiological activity of the element remains unimpaired. Having seen the opinions favorably received in America, France, and England, I had reason to believe that, by showing how the administration of phosphorus might be freed from all risk, I had succeeded in introducing this useful and powerful medicine to a sphere of usefulness from which, up to that time, it had been to a great extent excluded. Nevertheless I see from time to time that the solution in almond-oil is still employed; that the action of phosphorus is still deduced from what is in fact the action of this preparation of it, that it is still said, in consequence, to produce uncertain effects which are not infrequently dangerous; and that, therefore, the benefits which may be derived from *free* phosphorus are still as little likely to be appreciated as in former times.

"Thus also Mr. Balmanno Squire, in a paper published in the *British Medical Journal* for November 3d, 1877, related precisely the same symptoms as Dr. Day observed, which were caused by the same dangerous preparation, although, of course, ascribed by him to the action of 'phosphorus.' I do not offer these remarks either for the sake of showing that, in 1874, I published some correct observations, or of merely pointing out that the risk and discomfort to which patients are exposed by the use of phosphorized almond-oil are gratuitous. I am, as hitherto, of opinion that phosphorus is a widely useful drug; that it is generally administered in doses far too small to develop its full therapeutic effects; and since, while this preparation is employed, neither large doses can be employed, nor indeed any dose at all given without apprehension, I desire once more to draw attention to the views I have advanced in the work named."
—J. Ashburton Thompson, M.D.

Sugar Refining.

For some time past a controversy has been going on in the daily papers of this city, regarding the healthfulness of certain processes alleged to be adopted by some refiners of cane sugar and the nature of the materials employed. The discussion has been carried on with a degree of earnestness which has often approached to bitterness and has led to an amount of crimination which renders it no easy matter to decide what are the true merits of the case, and how much may be due excessive zeal or interested motive. Quite recently, however, an article has appeared in the *New York Daily Tribune*, written by Professor Henry Morton, of the Stevens Institute of Technology at Hoboken, which gives so clear a synopsis of the process of sugar refining that we venture to give the greater portion of it for the benefit of our renders.

The raw sugar to be refined consists of cane-sugar proper, mixed with glucose or inverted sugar, water, and various kinds of impurities or dirt, as we might call it, more or less offensive. This dirt includes coloring matter, gum, albumen, lactic, acetic and other acids, ammoniacal salts, phosphates, sulphates, carbonates and organic salts of potash, soda, lime and magnesia, silica, and also sand, fragments of cane, etc. The object of refining is, of course, to remove all the objectionable portion of this mixture as thoroughly as the circumstances of the case will admit. To effect this removal, three agencies or classes of agencies are employed: 1st, Crystallization; 2d, Filtration: 3d, Chemical reaction.

First—It is a general rule with all substances that when they crystallize from solution they will tend to throw out from the crystals and leave in the "mother-liquor," as it is called, or the remaining fluid solution, any foreign substance or impurity with which they may have been mixed.

Second—Of course, insoluble impurities can always be removed from any soluble substance by making a solution thereof and filtering or straining it; but besides this it has been found that "bone black" or "animal charcoal" (prepared by charring bones and like animal matter) has the remarkable property of absorbing, and so removing from a solution drained through it, coloring matter, organic matter generally, such as gum, albumen, gluten, etc., salts of lime, potash, soda, etc., and various other materials.

Third—By the addition of lime and albumen, the latter generally in the form of blood, to a solution of raw sugar, a flocculent precipitate is formed, which removes many impurities, such as some coloring matter, gum, insoluble matters, and the like. Acidulated alcohol will produce a similar effect, and hydro-fluosilicic acid and chalk, sulphate of alumina and other like compounds, have been employed to remove the very objectionable potash salt. Sulphurous acid, either as a gas or as a sulphite, has been frequently employed in the refining of sugars, as well as in the first making, for it not only tends to prevent fermentation, but is a powerful bleach

ing agent, destroying many organic coloring matters. Muriatic acid has a similar action as a bleaching agent, and so also has muriate of tin. Acetate of lead has a remarkable power of clarifying solutions of raw sugar, and is used for this purpose universally in all sugar laboratories in preparing solutions for test by the polariscope. There are other chemical reactions which have been proposed or used in refining, but the above will suffice for present notice.

Such being the general character of the agencies available for sugar refining, let us see how they are applied in practice. The raw sugar is first "melted" or dissolved in water, and is then passed into large tanks supplied with steam, called the "blow ups," where lime and blood are sometimes added. A scum and sediment form here, which are removed, and the solution is then run on to the "bag filters," whose name sufficiently indicates their character. From these the solution or liquor runs into the "bone-black filters," which are immense columns filled with animal charcoal, through which the solution drains. The solution is then concentrated in "vacuum-pans," that is, vessels from which air is pumped out and the pressure so relieved that the water passes off as steam at a relatively low temperature. When sufficiently concentrated, and in fact filled with crystals, the syrup is run into appropriate vessels and drained, or into centrifugals and "purged," as we shall see presently.

When ready for draining or purging, the syrup consists essentially of a mixture of crystals of more or less pure sugar with a mother-liquor, or molasses. Now this molasses consists of the original syrup, minus the sugar which has crystallized out; it therefore contains a quantity of inverted sugar (which will not crystallize), some water, a considerable amount of sugar still in solution, together with coloring matter and such other impurities as have escaped the filters and other treatment. The more completely this molasses is removed the purer and whiter will be the sugar. For the best loaf sugar the crystalline syrup is put into conical moulds, which have openings at their lower (pointed) ends, and is allowed to drain for some days. White syrup is then poured on the upper ends, and, draining through, carries out every trace of the molasses. The conical masses of sugar are then removed from the moulds, are dried and broken into lumps, or crushed, or turned in a sort of lathe if they are to be sold in the form of the old-fashioned conical loaf. The molasses which drains from this first boiling of the syrup is diluted, "blown up," filtered, and then boiled again, and when it crystallizes as before, is run into large moulds where it sets, and after draining or purging in a centrifugal, is finally obtained as a sugar of a light buff color known as C sugar. The cause of its color is that some of the coloring matter is now entangled in the crystals and that the molasses is not thoroughly removed. The molasses which drains from this second boiling or C sugar is again diluted, blown up, filtered, boiled, drained, and yields a product known as X or "yellow sugar," and the molasses which drains from this, being similarly treated as before, is boiled down to a density of 39° to 45° Beaumé, and is sold as "golden syrup."

The difference between these various grades of sugars, it will be seen, lies in the circumstance that at each successive stage of boiling and crystallization the proportion of glucose, or inverted sugar, increases, and also the amount of coloring matter. This coloring matter, to be sure, is largely removed each time by the filtration through the animal charcoal, but it is also rapidly developed by exposure to air and heating which cannot be avoided, and may easily become excessive by a little want of care and skill. Many years ago it was noticed that a very small quantity of muriate of tin in solution sprinkled on the sugar while purging in the centrifugal had a marked effect in removing a gray color which the sugars sometimes acquired, and which hurt their market value. This tin solution was purged out or driven out of the sugar in the centrifugal, so that only a trace was left (such a quantity that ten pounds of sugar did not contain enough for a chemist to weigh), and this being unquestionably harmless, many sugar refiners tried the process where a lot of sugar showed the objectionable gray shade. Most of them, however, finding that the tin-salt accumulated to some extent in the syrup, and realizing that this process was practically but a remedy for bad refining, being only useful where a bad product has been made, discontinued its use after their first experiments or never used it at all. Dilute muriatic or hydrochloric acid was also used for the same purpose in the same way.

Sulphurous acid, which similarly is an efficient bleaching agent, was also used, being applied in the vacuum pan or to the syrup just before it passed into that apparatus. Its use has been continued to the present day, and is certainly open to no valid objection on the ground of wholesomeness.

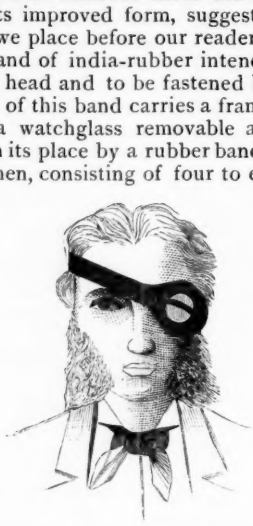
The above is a general description of the method of sugar refining almost universally employed up to some six or eight years ago. At that time there was a great falling off in the demand for hard sugars, and a corresponding increase in that for soft or yellow sugars. To meet this, many refiners adopted what is known as the Scotch system. In this the sugar is melted, "blown up," filtered through bone-black very thoroughly, boiled down very thick, run warm into centrifugals, and barrelled. By this means hardly any molasses or syrup is separated, and thus all the loss occasioned by the sugar which in the other process is finally left in the molasses (of which it constitutes some 30 to 40 per cent) is avoided, as well as the expense and

loss involved in the repeated treatments. A much larger total product of sugar was thus obtained from a given quantity of raw material, all of whose saccharine matter was rendered available; and therefore the consumer got his sugar cheaper than it could otherwise have been supplied to him, for so closely did competition keep down price to cost that $\frac{1}{8}$ of a cent per pound came to be all the margin out of which the refiner paid for his capital and profit. As to the advantage of this lower grade sugar to the consumer, a very simple calculation will make it plain. Absolutely pure sugar is now sold at $8\frac{3}{4}$ cents per pound, or $8.75 per 100 pounds. Now the yellow sugars which sell for $6\frac{1}{2}$ cents a pound, or $6.50 per 100 pounds, contain 83 per cent of pure white sugar, or 83 pounds in each 100; this at $6.50 makes $7\frac{8}{16}$ cents per pound for the pure white sugar contained in the yellow sort in place of $8\frac{35}{100}$ cents which would be paid for each pound of the same pure sugar in the hard white loaf. Besides this, the purchaser of the yellow sugar gets all the other saccharine constituents, which are as sweet as honey at least, for nothing. As these sugars contained all the molasses, as well as the sugar of the raw material, they would naturally show a higher percentage of glucose, or inverted sugar, than those from which a large amount of molasses or syrup has been removed; but this molasses or mixture of glucose is in no proper sense an impurity, as it has been sometimes called by those interested in misrepresenting the matter, for besides being a part of the original material, it is clean, for it has been cleansed of all objectionable constituents, wholesome, nutritious, and only a little less intensely sweet than the pure white sugar itself. In order to prevent these sugars from having a dark color, it was necessary to use bone black more freely in purifying and decolorizing the syrup during manufacture. To the same end sulphurous acid was used as already described, and without doubt some refiners may have employed muriate of tin or muriatic acid.

The employment of these two last-named substances, while harmless if judiciously applied, might, however, evidently be abused, or by carelessness become injurious; and as it would only be a means of patching bad work, it should be discountenanced by the public, as it would undoubtedly be by every refiner who valued his reputation for skill and enterprise.

A New Eye Bandage.

In certain affections of the eye, particularly in iritis, irido-choroiditis, keratitis, etc., emollient applications are often found very serviceable. It is, however, not quite easy to prevent the latter from rapidly becoming dry, and therefore useless, while at the same time the patient is generally compelled to pay constant attention to them, and unable to attend to business. Dr. Maurel, surgeon in the French navy, has contrived an apparatus which removes these drawbacks, and which in its improved form, suggested by Dr. Maréchal, we place before our readers. It consists of a band of india-rubber intended to pass around the head and to be fastened by buttons. The centre of this band carries a frame in which is placed a watchglass removable at pleasure, and held in its place by a rubber band. A small piece of linen, consisting of four to eight layers



stitched together, is first placed upon the eye, then a piece of sponge which, when wetted, measures at one edge $\frac{5}{8}$ inch across, and at the other end $\frac{1}{4}$ inch, is saturated with the lotion and placed on top of the linen, narrow edge downwards, and finally the eye bandage is applied more or less firmly, according as it may be required. The upper edge of the sponge is to be in contact with the upper part of the orbit, so that the patient may be enabled to occasionally moisten it with the lotion without removing the bandage. The glass in front of the sponge, which is covered with moisture partly from the sponge, partly from confined vapors, permits the patient to ascertain the condition of moisture in the sponge. The apparatus gives so little trouble that, if only one eye is affected, the patient may, if necessary, even attend to his regular business, and need not be confined to the house.—*Bull. Gén. de Thérap.*, Nov., 1878.

Pure Borax as an Aliment.

Experiments have lately been made by M. De Cyon as to the physiological action of this substance. He fed dogs, in one series of experiments, on meat preserved by a borax process, and in another on fresh food to which various quantities of borax were added. It was found that pure borax added to meat to the extent of twelve grams daily (which is ten times what the Jourde's process requires) may be taken in diet without causing the least disorder of general nutrition. Further, borax substituted for common salt increases the power of assimilating meat, and may greatly increase the weight of an animal, even when the alimentation is exclusively albuminoid.—*Ill. Scient. News.*

RECENT PAPERS.

Olive Oil and Sponges in Cyprus.—In a report on the trade of Cyprus, recently published, Mr. Consul Watkins says:—"The produce of olive oil in 1877 was estimated at 250,000 okes, against 200,000 okes in 1876. Prices ranged from 9 pias. to 10 pias. an oke. The oil-producing districts are Keryina, Kythrea, Larnaca, and Limassol. As a rule the oil tree only produces abundantly once in five years. The conditions required for a good yield are cold and wet weather, when the quantity produced may reach 400,000 and even 500,000 okes. It is rarely exported; when it is cheap, soap is made in such quantities as to supply Mersine and other parts of Caramania. Sponge-fishing commences in May and ends in August. The fishers are Greeks from the island of Hydra and Castelrossa. About 40 boats in all were employed in 1877, each boat being manned by a crew of eight to ten. Operations extend from Baphos to Caravostassi, on the south-western and western coasts, and from Famagusta to Cape St. Adrea, on the eastern coast. The quantity taken last summer amounted to about 2,500 okes of all sizes and qualities, chiefly of the more common kind. Five hundred okes were sold to Syrian buyers at 20 f. per oke; the remainder were taken away."—*Chem. and Druggist.*

Eucalypsinthe.—Among the exhibits of the French "liqueur" industry at the late Paris Exhibition, a new kind was exhibited, which is said to have already become quite fashionable, and may be had in many of the cafés of Paris. It is called *eucalypsinthe*, being distilled, as its name implies, from the *Eucalyptus Globulus* Labill. (Blue Gum-tree). It is claimed to be "hygienic, aperient, alterative, febrifuge, refreshing, tonic, digestive, economical, and agreeable." The latter epitheton is, however, to be taken *cum grano salis*. In resembles in odor and taste the common absinthe, and is equally abominable to those who have not forcibly accustomed themselves to the use of it. The originators, probably with a view to combat any repugnance on first tasting it, state, that "the first glass surprises, the second pleases, the third conquers."—After *Scient. Amer.*

Determination of free Mineral Acids.—P. SPENCE and A. ESILMAN employ for the detection of free mineral acids in different commercial products the well-known fact that the yellow color of ferric acetate is not destroyed by free acetic acid or acid sulphates, but is immediately destroyed by free sulphuric, nitric, or muriatic acids. Their standard solution contains 10 parts of ferric alum, and 8 parts of crystallized sodium acetate, in 1,000 parts of acetic acid of 8%.—*Chem. News*, 37, 211.

Staining Floors.—The London *Furniture Gazette* commends the following method of staining floors in oak or walnut colors: Put 1 oz. Vandyke brown in oil, 3 oz. pearlash, and 2 drms. dragon's blood, into an earthenware pan or large pitcher; pour on the mixture 1 quart of boiling water; stir with a piece of wood. The stain may be used hot or cold. The boards should be smoothed with a plane and glass-papered; fill up the cracks with plaster of Paris; the brush should not be rubbed across the boards, but lengthwise. Only a small piece should be done at a time. By rubbing on one place more than another, an appearance of oak or walnut is more apparent; when quite dry, the boards should be sized with glue size, made by boiling glue in water, and brushing it in the boards hot. When this is dry, the boards should be papered smooth and varnished with brown hard varnish or oak varnish; the brown hard varnish will wear better and dry quicker; it should be thinned with a little French polish, and laid on the boards with a smooth brush.

Erythrophlæum Guineense and Erythrophlæum Couminga.—(N. GALLOIS and E. HARDY.) *Erythrophlæum Guineense* Don, called by the Portuguese *Mancóna* [otherwise known by the names *Bourane des Floupes, Tali, Boudu, Boudou*, etc.], is a large tree, belonging to the family of Leguminosæ, growing in various parts of the western coast of Africa. Its wood, which is very hard and durable, is covered with a bark used by the natives for poisoning their arrows, and for the preparation of liquids used as ordeals for criminals. The bark occurs in flattened pieces, reddish-brown, with irregular surface; it is hard, fibrous, inodorous, produces violent sneezing when powdered, and belongs to the class of cardiac poisons. The authors have found in it an alkaloid which constitutes the active principle. It may be obtained in various ways. The powdered bark is macerated in 90 per cent alcohol, slightly acidulated with hydrochloric acid. The liquid is strained off without expression, filtered, and the same treatment two or three times repeated, until completely exhausted. The alcoholic liquids are united, most of the alcohol is distilled off, and the residue allowed to become quite cold, when it appears as a reddish-brown extract, full of resin. This residue is treated five or six times with tepid distilled water, the solution is allowed to cool, filtered, concentrated on the water-bath, and again cooled. The residue is then saturated with ammonia and four or five times its volume of pure acetic ether is added. This is decanted, the residue once more treated with acetic ether, the ethereal solutions concentrated, and the yellowish residue several times extracted with cold distilled water. This last solution, after filtration, is evaporated in vacuo. If the substance thus obtained is not sufficiently pure, the extraction with acetic ether, etc., is repeated. The final solution is allowed to evaporate spontaneously over sulphuric acid.

Instead of ammonia, sodium bicarbonate may be used, to set the alcaloid free.

This alkaloid, which the authors name *erythrophlæine*, appears as a transparent, amorphous, light amber-colored substance, of a firm and gummy consistence. It is soluble in water, alcohol, amylic alcohol, and acetic ether; less soluble in ethylic ether, chloroform, and benzine. It forms salts with acids.

Direct experiments upon Mancona-bark appear to prove that the alcaloid pre-exists in the bark, and is not a product of the processes employed in preparing it.—*L'Union Pharm.*, Dec., 1878.

Chewing Gum.—Among the quiet little manufactures of the country is that of chewing gum. One factory exists in this city, and others are in New England, New York State, Ohio Illinois, and Tennessee. The gum is sold by druggists, grocers, and confectioners in cities. Gum from spruce trees was exclusively used until recently, when it found a rival in so-called gum mastic (not real gum mastic), a white and attractive article made from paraffine, which is sweetened. The consumption of this chewing gum in the United States is about thirty tons yearly; that of spruce gum somewhat less, and that of a gum made in Tennessee from balsam tolu, and sold in the Southern States, about twenty tons. Lately a material has been used styled "rubber gum." It is from the sap of a sapotaceous tree of South and Central America. [This is *Mimusops Balata* Gærtn., = *Achras Balata* Aubl., *Sapota Muelleri* Bl., the tree which yields the rubber-like substance "balata," on which see NEW REMEDIES, 1878, 286, 367.—ED. N. R.] The sap, like that of the india-rubber tree, has a milky look. The gum was first imported into the United States with a view of melting it with india-rubber, in order to produce a cheaper article than the latter. It was found to be impliable, and therefore useless for that purpose. It had long been chewed by South and Central American Indians, and found useful in allaying thirst. Experiments were therefore made here in purifying it for chewing, and with final success. It is tasteless, and has the merit of lasting longer than other gums, which more quickly dissolve and crumble in the mouth. So great is its ductility that a piece half an inch square, after being heated in the mouth, can be stretched into a thread a hundred feet long. Its consumption is about fifty tons a year. Chewing gum does not, like tobacco, require that the saliva shall be expectorated; it does not, like smoking, excite the nerves, nor, like a superabundance of food or drink, hurtfully overload the stomach.—*Ill. Scient. News.*

Bismuth Subnitrate Incompatible with Alkaline Bicarbonates.—(THOS. GREEN.) The author thinks that previous statements as to the reason given for the incompatibility of bismuth subnitrate and alkaline (bi-)carbonates are in the main correct, namely, that this depends upon a mutual reaction between the two salts, independently of any free acid, which may exist in the bismuth salt. The following rough experiments seem to confirm this view :

Two drachms of bismuth subnitrate and an equal weight of sodium bicarbonate were mixed with a small quantity of distilled water, and the bottle containing them was corked and set aside. In a short time, perhaps 10 minutes, effervescence commenced, and in about an hour the cork was expelled from the bottle. The cork was replaced and the reaction allowed to go on until all effervescence had ceased. The mixture was then transferred to a small filter, and the filtrate tested for nitric acid, which was found. The precipitate, after being very well washed, was also examined for nitric acid, but without success. It effervesced, however, briskly on the addition of dilute sulphuric acid, proving the presence of carbonic acid. Under a lens the precipitate was observed to have lost the crystalline structure of the subnitrate, having assumed the appearance of the carbonate. On substituting the carbonate for the bicarbonate of sodium, no effervescence took place, but at the end of 48 hours the bismuth salt was found to have been completely converted into carbonate.—*Pharm. Jour. and Trans.*, Dec. 21st.

The Oil of Amber in Anginose Affections.—DR. A. R. FINK, of Philadelphia, recommends very highly the oil of amber for the relief of the neuralgic element of anginose affections. In support of this he cites several cases treated by this drug with marked success. It was only used in conjunction with other treatment, but the pain ceased so invariably on the use of the amber, and, in several cases, reappeared so quickly on its disuse, that, in Dr. Fink's opinion, there could be no question as to the causal relation of the administration of the amber to the relief of the pain. It is the presence of neuralgic pains, and not the organic or functional character of the heart affection, that indicates the use of this agent. Hysterical angina frequently receives the happiest relief from the addition of from eight to ten drops of the oil as an antihysterical dose, repeated every twenty minutes.—*Medical Times.*

Hydrobromate of Quinia as an Antipyretic.—DR. ESQUERDO administered this salt to a typhoid patient, whose temperature had been 40° C. for several days ; two days afterwards the temperature was reduced to 36° C. At this point, as the author feared collapse, since the reduction had been so considerable, the hydrobromate of quinia was no longer given ; the temperature became higher. In two cases of phthisis the hydrobromate caused a disappearance of the feverish symptoms and swellings. The dominant action of hydrobromate of quinia consists in its power of causing a lowering of temperature and of diminishing the frequency of the pulse whilst it increases its amplitude. The observations of Dr. Esquerdo are corroborated by Dr. Cahis, who has observed in a typhoid patient a lowering of temperature from 41° to 39° or even to 38° C. brought on by the administration of fifty to seventy centigrams (= 8 to 11 grains) of the hydrobromic salt.—*Independencia Medica* in *The Practitioner.*

Thymol and its Uses.—DR. B. KÜSSNER, of Halle, has tried thymol internally. In doses of three to five drops of a one-per-cent solution he found it useful in the diarrhœa of children. An inhalation of one part to one thousand of water reduced the fever and expectoration in a phthisical case.

Animals poisoned with thymol sink into a profound coma. After death their blood is dark and fluid. Fatty degeneration of internal organs is, however, not found. Injected into the veins it lowers the temperature and induces stupor.—*Med. Press and Circ.*

Strychnia as an Anti-Emetic.—M. EMPIS (of La Charité, Paris) uses a very dilute alcoholic solution of strychnia for allaying that kind of vomiting which is called "nervous," because it does not correspond to any organic lesion. Although there are quite a number of such emetics, still the strychnia solution is highly praised by Mr. Empis. He directs the following mixture to be boiled for some minutes : strychnine, 1 centigram ($\frac{2}{10}$ths of a grain) ; alcohol, 1 gram ; water, 99 grams ; then to throw the whole on a filter of paper, which retains the undissolved strychnine. The liquid which passes through possesses a very great bitterness. M. Empis usually gives this liquid in the dose of three tablespoonfuls in the day. It is not unusual to see the vomiting stop after the first.—*Canad. Jour. of Med. S.*

Destruction of Oxyures.—MR. LABOULBENE recommends a new method for destroying the oxyures or small thread-like worms infesting the anal folds, causing such insupportable itching, and which are so difficult to get rid of. This means consists in injections of syrup (or molasses) or glycerin. Every oxyuris touched by these liquids soon disappears, and as there is nothing irritant about them, they can be repeated often enough to exterminate every adult, and consequently destroy the race as soon as the eggs previously deposited shall have been destroyed.—*Canad. Jour. of Med. S.*

Treatment of Diphtheria.—M. KIEN, in the late epidemic of diphtheria at Strasburg, has found that Schaller's method of treating diphtheria with perchloride of iron—twenty drops in twenty drops of water, in a teaspoonful or two of coffee every two hours, was exceedingly effective. In some cases, in which the medicine did not act sufficiently rapidly, M. Kien has given in addition Syrup of Eucalyptus, according to the plan of M. Goldschmidt. If the patients refused to take the perchloride of iron, a lotion was employed, such as was proposed by M. Mandl, of Paris, for application in chronic granular pharyngitis. The lotion was applied by means of a brush, as a wash for the sore places, two or three times a day. It was composed of carbolic acid 0.10, pure iodine, potassium iodide, āā. 0.20 ; glycerin, 10.00 grams. Independently of this, he gives salicylate of sodium, if symptoms of fever present themselves ; the drug acts in the same way as sulphate of quinia, whilst it is more easy to administer in a liquid form.—*Gazette Médicale de Strasbourg*, in *The Practitioner.*

A Novel Use for Apomorphia.—At a late meeting of the French Association for the Advancement of Science, M. Verger related the case of a child with a plumb stone impacted in the gullet. No instrument being at hand for the extraction of the foreign body, recourse was had to emetics. Ipecacuanha failing to induce vomiting, it was decided, after consultation, to inject apomorphia subcutaneously. Two injections were practised, amounting in all to two and a half milligrams of the alkaloid, not a large amount. Vomiting was soon excited, and the foreign body expelled.—*The Lancet.*

Whooping-Cough treated by Tincture of Myrrh.—(DR. CAMPARDON.) Whooping-cough yields rapidly to the alcoholic tincture of myrrh, administered in quinine wine, or Vichy water (15 drops of the tincture to the tablespoonful). A tablespoonful should be administered every hour or two. This treatment in no way interferes with the appropriate remedies for the tracheo-bronchitis or the pulmonary congestion.—*Bulletin Thérap.*

Potassium Oxalate in the Treatment of Metritis.—DR. GRATTI, during three years of general practice in northern Italy, has employed potassium oxalate in the treatment of metritis and peritonitis, and has obtained excellent results.

Lange also employed this remedy, and as its effects were so constantly beneficial, he always administered it in these diseases and obtained complete cures in all cases of inflammation of the uterus and its appendages, except those following the use of obstetrical instruments.

In a few exceptional cases, opium had to be given with

several doses of the oxalate. Gaspari asserts that this salt has no effect upon puerperal fever. It is administered in a daily dose of 0.80 grams (12 grains) in 125 grams of some gummy emulsion. Sodium oxalate can be employed in its place.—*Gaz. Méd. de Lyons*, in *Detroit Lancet*.

New Method of Covering the Taste of Cod-Liver Oil.—Dr. Ponteres mixes a tablespoonful of cod-liver oil with the yellow of an egg, and when they are thoroughly combined adds to them a few drops of spirits of mint and half a glass of sugar-water. In this way he obtains a sort of mulled egg, which differs very little from ordinary mulled egg, and which presents neither the taste nor the odor characteristic of cod-liver oil. It can consequently be taken without repugnance by the most fastidious patients.—*Union Méd.* in *Richm. and Louisv. Med. J.*

Detection of Glucose in Urine.—Dr. H. G. Piffard offers as a convenient substitute for Fehling's solution the following mixture which may be kept ready made, and may be carried in a small vial to be used any time at the bedside in the house of a patient: Take of sulphate of copper (C. P.), one part; crystallized tartrate of sodium and potassium, five parts; sodic hydrate (C. P.), two parts. Mix well in a mortar. The resulting mass can be kept in a wide mouthed bottle, until wanted. For use, a piece the size of a pill is dissolved in a couple of drachms of water in a test-tube. A few drops of the suspected liquid are now added, when, if sugar be present, the usual reaction will be manifested.

Dr. Lyons recommends the following modification of the copper test for sugar in the urine.

Put into a test-tube, in succession, four drops of a solution of pure copper sulphate, 1:10; four drops of a solution of tartaric acid, 1:4; about half a fluid drachm of solution of potassium hydrate, 1:8; boil, and proceed as with Fehling's solution. Made of the strength directed, the solution of tartaric acid is found to keep perfectly well; some glycerin may be added, or a minute quantity of salicylic acid to insure its keeping, or the tartaric acid (about one grain) may be added in the dry state, but the method as described gives perfectly satisfactory results.

The Best Form of Mercury for Hypodermic Use.—Dr. R. Kirk gives, in the *British Medical Journal*, his experience on this subject while he was at the Edinburgh Lock Hospital; he says:—

Six solutions were used during my term of office; the bichloride with morphia; the albuminous solution of the bichloride; Savory and Moore's lamels; a simple aqueous solution of the bichloride; the biniodide, and the bicyanide. The last two were soon discontinued, as possessing no perceptible advantages over the others; but two series of comparative experiments with the other four were made with the utmost care. The first series was conducted to determine which produced the least irritation, and the patients were injected with all four solutions in rotation, with the result, rather surprising, I must admit, of showing that the simple aqueous solution of the bichloride, two grains to the ounce, produced as little irritation as any of the others. In the whole series of over three hundred injections, there was not a single boil, and only on rare occasions was there induration enough to cause tenderness. The second series showed that the amount of mercury required was the same, whatever solution was employed.

The only reasons to which I can ascribe these results are: thoroughly cleansing the syringe-needle before each injection, and inserting the needle perpendicularly and deeply into the subcutaneous tissue. I believe if these two points are carefully observed, that mercurial injections may be given with almost perfect safety, and with a solution so simple as an aqueous one of the bichloride.—*The Med. and Surg. Reporter.*

Spirit of Walnut for Vomiting.—Ed. Mackey, M.D., M.R.C.P., recommends (*London Practitioner*) the spirit of walnut, made after the following formula, for vomiting: Fresh walnuts, ℥ xxx.; spirit of wine (rect.), ℥ xij.; water, q. s.; distil ℥ xvj. He says: "My own experience is, in general terms, of quick and marked benefit from drachm doses, given every one to four hours, in a little water, for hysterical vomiting, for that of obstinate dyspepsia, and of pregnancy, for anomalous cases, and even for cerebral vomiting. I have tried it in septicæmia, and cannot be surprised if in that case I was disappointed; in the other cases it has always given more or less relief.—*Louisville Med. News.*

Gedanit, a new fossil Resin.—(O. Helm.) Among the amber dug up at the shores of the Baltic, or thrown upon the coasts by the sea, there occurs an admixture of a peculiar resin, which differs from amber by its greater friability, so as to make it inapplicable for some of the uses to which amber is put. The workmen call it *friable* or *unripe* amber. In consequence of its physical and chemical difference from amber, the author has held the opinion that this resin cannot be derived from the true amber-pine *Pinites succinifer* Göpp.; although it must have been produced at the same time and in the same localities. The author found it to contain less oxygen than amber, to be less hard, of a lower melting-point, more easily soluble in ether and other solvents, and to be free from succinic acid. He gave it the name *gedanit* from the Latin name of the city Danzig, *Gedonia*, near which it is frequently met with.—*Arch. d. Pharm.*, Dec., 1878.

Quantitative Estimation of Nitric Acid.—(E. Pfeiffer.) The author attributes great accuracy to the method of determining nitric acid in nitrates, which was originally proposed by Persoz (in 1861), provided certain precautions are observed. The method consists in fusing the nitrate with potassium bichromate, by which the nitric acid is expelled, and its amount is determined from loss of weight. The bichromate should previously be melted at low heat, in a thin-walled crucible; as soon as it flows quietly, the flame is removed, and when it has somewhat cooled, the whole mass may be separated by a gentle pressure upon the sides of the crucible. The nitric acid determination is made as follows: Determine the amount of water, and any carbonic, sulphuric, and hydrochloric acids in the nitrate; then melt 2 gm. of the original nitrate in a porcelain or platinum crucible, the lid of which is kept at a slight distance from the rim by a platinum-wire triangle which is interposed. Meanwhile a quantity of the bichromate, amounting to three or four times that of the nitrate, is melted in a thin platinum dish, then allowed to cool sufficiently to be removed. The crucible containing the nitrate having been allowed to cool in a drying apparatus, the bichromate is, still hot, transferred on top of it, the triangle and lid are put in place, and the whole is allowed to get cold. It is then weighed. Next it is heated with great care by a small flame, which must not touch the crucible, to prevent a foaming up and spirting of the mixture. Very gradually the flame may be enlarged and brought nearer, and finally the crucible is heated to a dull red heat, until the contents appear as a quietly flowing liquid, and no more vapors of nitric acid are given off. The inner walls of the crucible and the lower surface of the lid must have no greenish spots, which would indicate chromic oxide, but only the brownish-yellow color of the bichromate. After cooling, the loss of weight of the crucible is determined. From the loss is to be deducted any carbonic acid which is known to be present, and the rest calculated as nitric acid.—*Arch. d. Pharm.*, Dec., 1878.

Tincture of Thlapsi (Shepherd's Purse).—The following letter of Dr. Jas. L. Tucker, in the *Chicago Med. Journ. and Examiner* (Jan.), draws the attention of the profession again to this old remedy:—"As an efficient remedy for functional derangement of the uropoëtic system, a condition whose organic cause eludes analysis, I have for some time been in the habit of prescribing the tincture of *Thlapsi Bursa-pastoris*,* or shepherd's purse, a

* The author calls it *Thapsus Bursa-pastoris*, which is a mistake. He also heads the article "Tincture of Thapsus." We have changed both to the correct name, *Thlapsi Bursa-pastoris*, a synonym for which is *Capsella B.-p.*—Ed. N. R.

genus of cruciferous plants. I treat with it not only hæmaturia, for which, on account of its astringent properties, it was formerly used, but cases of renal and cystic derangement very various in their nomenclature, but always this side of any considerable destructive lesion.

"I desire to draw to it the attention of the professio1, because I believe it is a remedy not generally known. It has long been a favorite with the so-called "eclectics," whose leading pharmacist first called my attention to it."

Borax Said to be Dangerous as a Preserver of Food.—(G. Le Bon.) The author reasserts the injuriousness of borax when used to preserve food, and especially meat.* The latter, when steeped in a solution of pure borax, or covered with the powdered salt, may be preserved or unchanged for a long time, but if taken as food, such meat produces intestinal derangement which necessitates its disuse. Borax taken in small successive doses is a poisonous agent, the use of which should be strictly prohibited in the preservation of alimentary substances. M. Peligot has already pointed out † the poisonous action of borax upon plants. Several companies who had begun to use this salt for the preservation of meat have been obliged to give it up. The author further shows the necessity of avoiding saline substances altogether for the preservation of food, an object which he considers attainable solely by the use of cold.—*Chem. News*, Jan. 3d.

Erythrophlæine.—(F. v. Mueller and M. Rummel.) The alkaloid which has been discovered in the bark of *Erythrophlæum Guineense* may also be obtained from the bark of *Erythrophlæum Laboucherii*, F. v. M. It crystallizes in needle-shaped crystals which are often united in tufts and arranged in the form of an oblique cross; it is almost tasteless, not bitter either by itself or united with acids; its concentrated solution in aqueous alcohol is precipitable on addition of absolute alcohol; its salts are likewise precipitated by phospho-molybdate and phospho-tungstate of sodium, it appears to be nearly related to laburnine. It occurs in the dry bark to the extent of about 2%. This alkaloid may be sought for also in a species recently rendered known from the Seychelles. —*Wittstein, Org. Const. of Plants; transl. by Mueller.*

Alstonine.—(Ferd. v. Mueller and L. Rummel.) The bark of *Alstonia constricta* F. v. M., contains an alkaloid, *alstonine*, which may be obtained by treating the alcoholic extract with water and a little hydrochloric acid, adding to the filtered solution a small excess of ammonia, dissolving the separated flocks in ether, evaporating the ethereal solution, and purifying the remainder by dissolving again in dilute acid and repeating the above process. Orange-yellow, brittle, pellucid mass of very bitter taste, melts below 100° C., and is carbonized in higher temperature; dissolves easily in alcohol, ether, and dilute acids, sparingly in water. All its solutions in the dilute state exhibit a strong blue fluorescence, which is not affected by acids or alkalies. Its alcoholic solution has a slightly alkaline reaction. Alstonine combines with acids, but does not completely neutralize them. Hydrochloric and other strong acids, also alkalies, decompose it partly on evaporation in the water-bath to a dark-colored acid substance. The hydrochlorate of alstonine gives precipitates with the chlorides of platinum and mercury, potassio-mercuric and potassio-bismuthic iodide, bimiodide of potassium, the phospho-molybdate and the phospho-tungstate of sodium, bichromate of potassium, picric acid, and the alkalies and alkaline carbonates. Tannic acid precipitates the acetate and the pure base, but not the hydrochlorate. Concentrated nitric acid dissolves it with crimson color, yellow on warming; sulphuric acid, reddish brown, afterwards dirty green; hydrochloric acid only effects a yellowish solution. Alstonine differs from ditamine (the alkaloid from *Alstonia scholaris*, R. Br.) chiefly by its behavior towards concentrated acids, and by its fluorescence, which has not been recorded of the other alkaloid.—*Wittstein, Org. Const. of Plants; transl. by Mueller.*

Depilatory.—Sulphide of calcium has long been known as an efficient means for removing hairs from parts of the living body, or from furs, etc. It may be prepared without trouble by passing a current of sulphuretted hydrogen gas through a thin milk of lime, prepared from fresh caustic lime, until it is saturated. Ten parts of this hydrated calcium sulphide are mixed with five parts of starch and dextrin, together with a little oil of lemon, to a thick paste, which is spread upon the part to be deprived of hairs. After about twenty minutes, it has destroyed the latter and may be removed with a spatula.—*Neueste Erf. and Erf.*

Rapid Filtration.—Dr. Ebermayer reports that he has found muslin, which is folded in shape of a filter, and placed below the latter, to be an excellent promotor of rapid filtration. He had occasion to make use of such additional muslin filters, for the purpose of removing the paper-filters from the funnel, without tearing; and he thereby had occasion to notice this useful property of the additional muslin filter.—*Drog.-Zeit.*

Preparation of a Durable Paste.—Max Regensberg recommends the following method for preventing mucilage, starch-paste, glue, or gelatin solutions from spoiling. Any of the above-mentioned solutions or pastes, which should have been prepared with hot rain- or distilled water, are mixed with a few drops of ordinary commercial silicate of sodium (silicate of soda) two to three drops for every fluid ounce. The preservative having been added, the mixture is well stirred with a wooden spatula. A solution which has already commenced to decompose may be restored by heating it strongly and adding four to five drops of silicate of sodium for every fluid ounce.—*Drog.-Zeit.*

Tamarind Extract.—(Dr. H. Hager.) Karl Erba in Milan prepares an extract of tamarinds, evaporated in vacuo, which is likely to be much used for preparing acidulous drinks, and which may be used as a substitute for citric acid. Its gentle laxative properties may also be found useful. Tamarind pulp is largely composed of cellular matter; this extract, however, has the consistence of thick honey, is quite clear and reddish-brown, and completely soluble in water.—*Pharm. Centralh.*, 1878, 459.—[It might be worth while to prepare such an extract in the U. S.—Ed. N. R.]

Ozokerine.—(Dr. H. Hager.) This substance, which has much the same appearance and properties of *vaseline*, is a product manufactured in Austria, and probably made from the fossil wax ozokerite or ceresin. According to Hager, it has this advantage over vaseline, that it has a thicker consistence, and costs two-thirds less. It is sold at six marks per kilo (with a discount of 10-20%), while vaseline costs twenty marks per kilo. It may be obtained from G. & R. Fritz, Vienna, I Bräuerstrasse 5.—*Pharm. Centralh.*, 1878, 461.

Pencils of Sulphate of Copper.—(O. Primke.) These are made as follows: Select large solid crystals of sulphate of copper, and split them in half, if they admit of it, by means of a small band-saw. They are then rubbed down with a sharp file to about the shape desired. Finally they are rubbed smooth on emery-paper laid flat on a table, immersed for a few moments in water, agitating them to and fro, whereby they attain lustre, and finally dried with filtering paper. A certain degree of practice and dexterity is required in their preparation.—*Pharm. Zeit.*, No. 97.

Peach Kernels for Clearing Water.—A Dutch hotel-keeper in the Transvaal clarifies the turbid water of the district in the following way. Half-a-dozen dried peach kernels are slightly cracked and thrown into a large butt of water. In an hour or two the muddiest water will be found beautifully clear.—*Mrs. Carey Hobson* in "*The Colonies and India.*"

* See, however, above p. 80. † See New Rem., 1877, p. 206.

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Transparent Show Bills may be cemented to glass windows as follows:—Very fine white glue (or preferably clean parchment clippings boiled in distilled water in glass or enamel until dissolved) must be applied very evenly with a soft hair brush to the face of the bill. Then press it on the glass, and in a few minutes the bill will be firmly fixed. Glass may be fixed to glass in this way, and the cement will bear a good deal of dry heat.—"Tried and proved. 'Mallet,'" in the *English Mechanic.*

The Eldorado of Wine-Drinkers.—The vintage in the neighborhood of New-Arad (Hungary) has been so abundant during the past year that the price of wine has fallen to very low figures. A litre of ordinary wine sells for 4 kreuzer (1.8 cents), and of the best for 8 kr. (3.6 cents). There are some country-taverns where for the sum of 12 kreuzer (5½ cents) any person may drink as much wine between 3 and 7 o'clock P.M. as he likes or is able to dispose of.

NOTES, QUERIES AND ANSWERS.

[*Under this heading we shall, to the best of our ability, endeavor to answer such questions addressed to us as come within the scope of this journal, provided they are accompanied by the name and address of the writer. Answers to queries received after the 5th of the month will lie over until the next issue.*]

No. 514.—**To Preserve Fruit** (M., Batavia, N. Y.).

If salicylic acid does not answer your purpose you may use the neutral sulphite of calcium (usually called sulphite of lime). Use two teaspoonfuls of this latter salt for each gallon of preserved fruit, with the usual quantity of sugar. The lime salt should be put in while the fruit is being heated, so that any impurities in the fruit or sugar may rise to the top and be removed. Fruit thus prepared, put in jars, and stored in a cool place, will keep for months.

To Keep Sweet Cider from Becoming Hard.—While answering the above, we may add, that the neutral sulphite of calcium is likewise used for preventing fermentation in cider.

No. 515.—**Thymol** (Dr. J. S., Natchez, Miss.).

This substance was detected by Caspar Neumann, of Berlin, in 1719. He distilled oil of thyme, and found crystals in the receiver, as well as on cotton-threads which he introduced into the distillate. After a while the whole distillate began to crystallize, and he thus obtained a large amount of a substance insoluble in water. Lallemand found that oil of thyme consists of two bodies, one containing oxygen, which is *thymol*, the other a hydrocarbon, called thymene. About one-half of the oil of thyme consists of thymol, and may be obtained from it in crystals by letting it stand in a cool place. It may also be obtained by distillation; that portion which passes over at 225–230° C. is pure thymol; but even at 185–225° C. a small part of the latter passes over with the more volatile hydrocarbon. The formula of thymol is $C_{10}H_{14}O$. It is very soluble in alcohol and ether, but only slightly so in water. 1,000 parts of water are capable of retaining one part of thymol in *partial* solution; that is, the thymol will not separate from it at ordinary temperature, but the solution is opalescent. To produce a clear and complete solution 1,300 parts of water are required. The principal source of thymol are at present the seeds of *Ammi Copticum* L. (or *Ptychotis Ajowan* DC), an erect annual herb, cultivated in Egypt and Persia, and particularly in India. We have recently learned that the house of Schimmel & Co., of Leipzig, which is probably the most extensive manufacturing establishment of essential oils in the world, have made arrangements to obtain a largely increased supply of these seeds, for the purpose of producing thymol on an increased scale and consequently at a lower price.

No. 516.—**To destroy Moths in Clothing, Furniture** (W. & Co., Cincinnati, O.).

Among the large number of substances which have been recommended and used for destroying moths, we can recommend particularly the following two, as being probably the most efficient:

1. *Naphthaline*, a peculiar solid substance obtained from coal-tar, sometimes called coal-tar camphor. This, when pure, forms white shining crystalline scales, of a faint tarry but aromatic odor. For the present purpose the less pure commercial naphthaline is, however, much preferable, as it is much more destructive to moths and other insects. It is first dissolved in benzine, and the solution either applied by means of a sponge or rag, or better by the aid of a finely perforated sprinkler.

2. *Benzine*: the ordinary pure benzine of commerce. This applied alone, like the former, is likewise very effective.

Great care must be taken to prevent the approach of a light to the furniture, before the highly inflammable benzine has completely evaporated, which usually requires a few days.

No. 517.—**Griffith's Universal Formulary** (K., Indianapolis, Ind.).

The last edition, revised by Prof. J. M. Maisch, was published by H. C. Lea, of Philadelphia, in 1874.

No. 518.—**To abstract the Tannin from Cinchona.** (Dr. F., Toronto, Can.).

This is usually accomplished by means of hydrated ferric oxide.

Prepare alcoholic or vinous tincture of cinchona in the usual manner; precipitate 8 fl. ℥ of liquor ferri persulphatis, U. S. Ph., with ammonia, wash the precipitated hydrated oxide of iron on the strainer, express strongly between folds of bibulous paper, and add it, while moist, to the tincture or wine, contained in a flask or other suitable vessel. Heat the latter on the water-bath to a temperature of about 150° F., and keep it so for several hours. Then remove, allow to cool, and filter. The contents of the filter may carry with it some of the alkaloids. It is advisable, therefore, to wash them with strong boiling alcohol, to evaporate the latter, to dissolve the residue in a little water acidulated with citric acid, and to add this to the other liquid.

No. 519.—**Soap Tooth Paste** (W. M. C., Moravia, N. Y.).

Take of white castile soap (Conti's), dried and in fine powder, 2 oz.; powdered cuttlefish-bone, 2 oz.; honey, 4 or 5 oz.; perfume at will, with or without the addition of a little alcohol. It may be colored pink by adding a small quantity of tincture of cochineal. Fine olive or almond oil forms the best soaps for this purpose. Castile soap, of course, contains olive oil.

No. 520.—**Watery Shellac-Varnish** (W., Baltimore, Md.).

Instead of using alcohol or benzine, a watery solution of borax may be used for dissolving shellac.

Take of Borax..... 100 parts.
Rain (or distilled) water.....2,250 "
Heat to boiling, and while stirring, gradually add
Powdered shellac..... ....300 parts.
When dissolved, strain through muslin and preserve.

This forms a water-proof varnish. Paper soaked with this is water-proof, and resembles parchment.

No. 521.—**Waterproofing Cloth** (W., Baltimore, Md.).

The following formula is recommended among others:

Dissolve 1 part of neutral aluminium sulphate (not alum, but the so-called "concentrated alum-cake") in 10 parts of cold water. Next boil 1 part of white resin, 1 part of soda, and 10 parts of water, until the solution takes place; add ½ part common salt, which will dissolve in the water, and cause the soap to rise to the surface; then dissolve this soap with an equal amount of palm-oil soap (navy-soap) in 30 parts of water. Soak the fabric in the alumina solution, then pass it through the soap solution, heated to boiling; lastly rinse it in pure water.

We give this formula here, as we have two queries put to us from two different inquirers. For your purposes it might be well to try a solution of paraffin in benzine. This should be saturated. The cloth or silk is to be immersed in this, and then spread out to dry.

No. 522.—**Ointment of Nitrate of Silver** (J. H. McB., Buffalo, N. Y.).

It is said that vaseline forms a good base for making an ointment with nitrate of silver. Whether such an ointment will find much application as a remedy may be doubted; but we should judge it to be a very good pomade for dying the hair and beard provided it keeps as well as it has been alleged.

EXAMINATION OF PHARMACOPŒIAL LIQUORS.

BY HENRY B. PARSONS.

THE complete quantitative analysis of alcoholic liquors is somewhat difficult, and is properly the work of an experienced analyst, but it is comparatively easy to make good estimations of alcohol and other more important constituents. The only extra apparatus necessary are a retort, arranged as explained in February NEW REMEDIES, and a specific gravity bottle, which can be home-made and inexpensive.

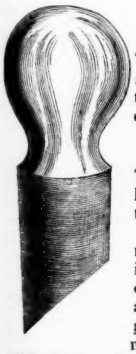
The *chief* pharmaceutical value of liquors depends upon the amount of alcohol they contain; hence the determination of the per cent of alcohol is of the first importance. While alcohol is valuable just in proportion to the amount of real alcohol present, there are other substances in whiskey, brandy, and wine which modify their odor, appearance, taste, and, in like proportion, their value. Hence an opinion as to the value of these liquors should not be based upon their content of alcohol alone, but should take into account the other substances present.

In examining pharmacopœial liquors, the following are the more important operations:

I. *Note Physical Properties;* write down systematically, color, odor, taste, reaction with litmus, and everything which a careful inspection reveals. In this way a clue may be had which will lead to a more careful examination for some particular substance suspected to be present.

II. *Take the Specific Gravity of the Liquor.*—For practical purposes it is best to compare a given volume of the liquor with an equal volume of water *at the same temperature.* This may be done by means of a specific-gravity bottle. This can be made from an ounce, glass-stoppered tincture bottle by merely filing or grinding off the lower part of the stopper at an angle of about 45°. This allows the bottle to be filled perfectly full, with no air bubbles. It is well to mark with a diamond upon the bottle.

Wt. Bottle and Water =
" Bottle =
" Water =
at 15.6° C. = 60° F.



Then, having found the weight of liquid required to fill the bottle at the standard temperature, its specific gravity will equal

$$\frac{\text{Wt. of liquid, at 15.6° C.}}{\text{Wt. of water, at 15.6° C.}}$$

Too much care cannot be taken that the liquor and the water shall have the proper temperature when weighed.

If nothing but alcohol and water are mixed, the specific gravity of the mixture is a reliable measure of the proportion of alcohol present. The stronger the alcohol the lower will be the specific gravity. If solids or dense liquids are mixed with alcohol, the specific gravity will be high and cannot be depended upon to show how much alcohol is present; liquids lighter than alcohol tend to lower its specific gravity.

With U. S. P. liquors the specific gravity of the entire liquor before distillation shows as follows.

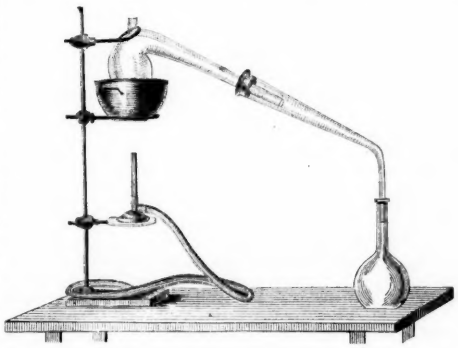
1. *Alcohol.*—If the three grades of alcohol are what they should be, the specific gravity before and after distillation will be the same, and will show the proper amounts of absolute alcohol. Alcohol should be neutral in reaction, should leave no residue when evaporated on the water-bath, should be colorless, and give no reaction for aldehyde.

2. *Whiskey* should leave only a very slight residue upon evaporation; when this is the case, its specific gravity after distillation will be slightly less than before.

3. *Brandy and Wines.*—When brandy is distilled from pure grape wines it will leave almost no residue when evaporated. Custom has, however, sanctioned the use of so-called brandies which are nothing but grain spirits, which have been "improved" by artificial coloring matters, sugar, caramel, ethers, spices, tannin, and, in fact, anything that will render them cheap and salable. In such mixtures the specific gravity before distillation is of little use for the determination of alcohol; but if it is below *one*, there will be little solid residue; and if high, the residue will be considerable. These statements hold true also for wines.

For full directions for taking specific gravity, see NEW REMEDIES, March, 1878, p. 82. The illustration shows the specific gravity bottle already explained.

III. *Distil.*—Empty the contents of the specific gravity bottle into the retort, rinse with a very little water and add the rinsings to the liquor in the retort, add potassic hydrate to faint alkaline reaction, and distil from the water-bath as directed in February NEW REMEDIES.



Use the specific gravity bottle as a receiver, and when it is full, insert the stopper, bring to the standard temperature, and take the specific gravity, as directed in II. By referring to the table of specific gravities of alcohol in the Dispensatory (under article "*Alcohol,*" Part I.) or in other books of reference, the amount of alcohol in the distillate may be ascertained. The percentage of alcohol in the original liquor will equal

$$\frac{\text{Wt. of distillate} \times \text{pr. ct. alcohol.}}{\text{Wt. liquor taken.}}$$

IV. *Find Solid Residue.*—Evaporate a known weight of the liquor in a weighed dish, until further heating on the water-bath causes no loss. The amount necessary to be evaporated will of course be greater in whiskey than in wine. From 10 to 50 cc. will probably be sufficient. The percentage of solid residue will equal

$$\frac{\text{Wt. residue} \times 100.}{\text{Wt. liquor taken.}}$$

Evaporate another larger portion (100 to 200 cc.) *nearly* to dryness, and treat several times with ether, reserving the undissolved residue (*a*) for further examination. Evaporate the ethereal solution to dryness, at a gentle heat, and notice its odor and reaction with litmus paper. If the substances were present in the liquor, this residue will contain "fusel oil," spices, salicylic acid, and traces of tannic acid. Fusel oil may be distinguished by comparison of its odor with a known sample, and by its odor when warmed with sulphuric acid. Spices are recognized by taste and odor, salicylic acid by a purple reaction with ferric chloride, and tannic acid by a greenish color with the same reagent. Treat residue (*a*) with several portions of common alcohol, and save the undissolved portion (*b*) for further examination. The alcohol, when evaporated, will leave in residue caramel, cane sugar, fruit sugar, glycerin, tannic acid, anilin colors, and most other coloring matters. Caramel is known by its brown color, characteristic taste and odor, and by reducing an alkaline copper solution. Fruit sugar also reduces the same solution. Cane sugar reduces it after a few minutes' boiling with

very dilute sulphuric acid. Residue (*b*) may still contain pectous matters from "fruity" wines, not too strongly alcoholic. They are, as a rule, insoluble in strong alcohol, and have the consistency of jelly. Their presence in wines is evidence that a portion at least is the "pure juice of the grape." Residue (*b*) may also contain a small amount of potassium bitartrate and other inorganic salts.

Alcohol should leave no residue. The residue from *whiskey* is most apt to contain tannin and caramel which have been added to give an appearance of age. A very small amount of tannin may come from the cask; larger amounts from oak shavings, logwood chips, or other additions. Caramel cannot be present except as an addition. If the whiskey is new (raw) it is likely to contain more than allowable amounts of fusel oil. *Brandy* frequently leaves, in residue, tannin, caramel, fusel oil, spices, sugars, and foreign colors, none of which are normal constituents (save a *trace* of tannin) in true grape brandy.

Wine may contain the same additions as brandy, together with pectous substances, traces of glycerin, succinic acid, potassium bitartrate, and salts, as normal constituents. Occasionally glycerin and salicylic acid are added to wines to prevent deterioration. This list is by no means complete for the possible additions which ingenuity or whim may suggest, but it embraces the substances most commonly found. Much may be learned by a careful reading of back numbers of NEW REMEDIES, as well as the Dispensatory and other standard works. For a very complete scheme for the analysis of liquors, the student is referred to "Prescott's Examination of Alcoholic Liquors."

V. *Find Total Ash.*—Ignite the solid residue and weigh the ash. Alcohol, whiskey, and brandy should leave no ash. Wine should leave a slight ash, less than one-half per cent, which consists principally of potassic phosphate.

VI. *Statement of Results.*—Arrange in order all the results obtained by the examination, and give opinions with reasons therefor. Keep all notes for future reference. In general it may be concluded that liquors are not what they should be, if they contain more than traces of tannin, fusel oil, or free acid. The presence of caramel or cane sugar is evidence that additions have been made after fermentation; the same is true of more than traces of glycerin, spices, foreign colors of all kinds, artificial ethers, and salicylic acid should not be present in any liquors intended for pharmaceutical purposes.

An examination of the "medicinally pure" liquors in stock will show that brandies and wines are more liable to be adulterated than are whiskey and alcohol. This is a matter worthy the careful attention of every dispensing pharmacist.

Gold in Queensland.—The report of the Mining Department for the year 1877 shows that Queensland has a gold-mining population of 17,903, including 4,634 Europeans and 13,269 Chinese. They obtained in the year 373,266 oz. of gold, which, at an average price of 3*l.* 10*s.* per ounce, represents 1,306,431*l.*; the average yield of gold per man being 20 oz. 17 dwts., worth 72*l.* 19*s.* 6*d.* The six principal reefing districts, however, of Charters Towers, Gympie, Hodgkinson, Ravenswood, Palmer, and Etheridge gave an average yield of nearly 49 oz., or 171*l.* per man. Although no new discoveries were made during the year, the yield of gold showed an increase of 20,000 oz. With machinery valued only at 237,890*l.*, no less than 88,904 tons of quartz were raised and crushed for a yield of 168,658 oz., or an average of almost 2 oz. per ton. The recently discovered field at Lukinville, Lower Palmer, has now a population of about 7,000 Chinese and 500 European miners. The auriferous country has been traced down the Palmer for nearly 100 miles, and it is said that the gullies and ravines back from the river will yield heavy returns of gold when the wet season sets in. Riots occurred recently among the Chinese miners, and it is reported that four men have been killed and a large number wounded; gambling and mining disputes are the attributed causes.—*Brit. Trade Journ.*

NOVELTIES.

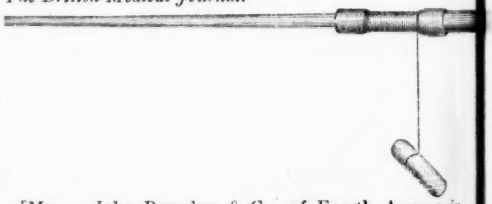
The Prentice Tooth Powder.

THIS article is manufactured by Prentice & Evenson, of Janesville, Wis., and sold at wholesale by Strong & Maynard, 50 Dearborn St., Chicago. We are not aware of the composition of the powder, but it is said to be in considerable demand. It is handsomely put up in large-sized bottles having metal "sprinkler tops." Three bottles are contained in each counter-case which is of triangular shape, and opens obliquely so as to display its contents to very good advantage. Besides the novel box, each package has a ludicrous photographic representation of the appearance of a female "before and after using the 'Prentice Tooth Powder.'" They are evidently taken from portraits of two lunatic asylum patients, one being a picture of hopeless dementia, and too homely for language to describe, the other a simpering and bespangled subject of hysterical mania, whose posture and tawdry finery are a capital burlesque of the chromos of theatrical celebrities which are often made to serve a similar purpose.

$3.50 per doz., or 50 cents per bottle, is the rate at which the powder is sold.

A New Anatomical Blow-Pipe.

THE ordinary blow pipe nozzle is so small as to make the injection of large cavities laborious, and this smallness is not required even for the injection of the eyeball. The new blow-pipe has a larger nozzle; also a glass mouth-piece, with a cap for the sake of cleanliness; and a simple india-rubber tube-valve, which, in practice, has been found very convenient. By Charles B. Keetley, F.R.C.S.—*The British Medical Journal.*



[Messrs. John Reynders & Co., of Fourth Avenue in this city, have undertaken the manufacture of blow-pipes of this pattern, with a modification suggested by us, consisting of an elastic cord for the attachment of the cap, which needs to be put upon the stretch, in order to put the cap on or take it off the mouth-piece, and thus prevent it dropping off in case of its being loose.—ED.]

Wells, Richardson & Co.'s Refined Catechu.

ON page 154 of our last volume, we gave a notice of the refined pale Catechu manufactured by this firm. The process, by which this is purified, and the manner of putting it up for the trade, have since been patented (Nov. 26th, 1878), the chief specification being the following:

"The process of refining and packing catechu herein described, which consists in first placing the catechu into a vessel containing a sufficient quantity of water, then subjecting it to the action of steam heat, at the same time introducing into the mass steam of a high temperature, thereby liquefying the catechu and forcing the lighter substances to the surface, then skimming, straining and settling, and finally placing the catechu, while still liquid, in boxes holding certain specified quantities."

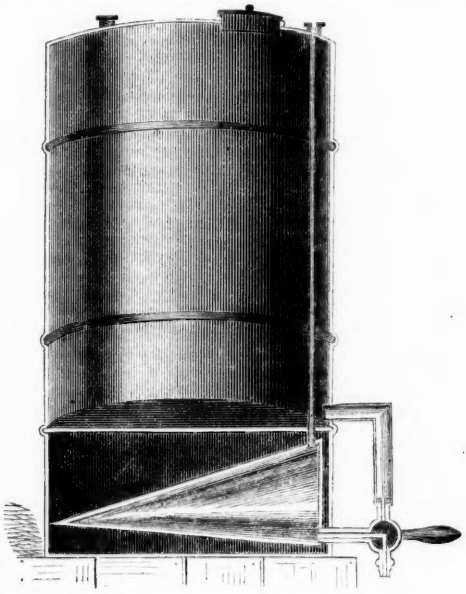
Dextro-Quinine.

IN an editorial article contained in our January number, we expressed our opinion on the value of the amorphous cinchona-alkaloids produced in the manufacture of quinine. This opinion, we have reason to know, is shared by a large number of physicians both here and

abroad. We also spoke of the objection which may possibly be made against the use of these amorphous bodies (generally termed "chinoidine" or "quinoidine"), namely, the absence of distinguishing and characteristic physical properties, such as crystalline form, etc At the same time, we stated that this objection would be found groundless, if the article in question be procured directly from the manufacturer, or from any house which will hold itself responsible for its purity. Messrs. Keasbey & Mattison, of Philadelphia, have lately put upon the market a substance which they have named dextro-quinine, and which is a purified form of this chinoidine. We have used it ourselves and do not hesitate to pronounce it pure. It will, no doubt, be found a valuable remedy in the treatment of malarial fever, etc. Its antipyretic power appears to be quite equal to that of *crystallized* sulphate of quinia, and its price ($1.50 per ounce), which is low in comparison with that of white sulphate of quinia, will make it a boon for those who are not overblessed with worldly means.

The Coleman Measuring Tank.

In the adjoining illustrations we show the general appearance and explanatory section of a tank made by the Coleman Tank Co., of No. 2 Liberty St., N. Y., which is worthy the attention of all dealers in oils or other fluids sold in small quantitites. The sectional figure explains the mode in which the various quantities are measured. Under the reservoir are placed conical vessels of capacities as various as may be desired. These are so arranged that when the handle of the top is turned downward, communication is established with the reservoir above, and the measuring can is filled. A small tube passes from each measure to the top of the tank and opens into the air, so that the latter can pass in or out as the measure is being emptied or filled. The fluid will, of course, rise in the tube to the level of the fluid in the reservoir, but the tube is so small in diameter that the variation in the amount discharged is hardly more than would be wasted in the ordinary methods of measurement. When the handle of the faucet is turned to the position shown in the cut, communication with the reservoir is cut off, and the fluid in the measuring-can escapes into the vessel placed to receive it.



This tank is especially adapted for kerosene, turpentine, alcohol, and all fluids which do not deposit much sediment, and the simple addition of a screw connection, which would allow the measuring tank to be removed and cleaned, would enable it to be used with paint oils likewise. The manufacturers claim that these tanks are made of the best galvanized iron, and that the measures are gauged by the State standards. The avoidance of extra measures, the facility with which exact quantities can be drawn in the dark, if need be, and the consequent immunity from risk of explosion, together with other features readily appreciated, render this tank worthy of notice.

A New Toilet Soap.

Mr. Carl D. S. Fruh, apothecary, at 1,225 Oxford St., Philadelphia, sends us a sample of soap manufactured by him from cocoanut oil, and which likewise contains chamomile and sulphur. It is recommended as being especially adapted for chafed surfaces, sensitive wounds, skin affections, and all purposes requiring a soap with unirritating properties. As an application to mosquito-bites it is likewise said to be excellent. The oblong cakes have a glistening appearance, pleasant odor, and weigh about 70.3 grams each. The cost is not mentioned on the wrapper.

Artificial Benzoic Acid.—Large quantities of benzoic acid are at present manufactured from naphthaline, a product obtained from coal-tar. This is converted by means of nitric acid, into phthalic acid, and the latter combined with lime to calcium phthalate. The latter salt is heated for several hours in a closed boiler with milk of lime to about 326° C. (619° F.), when it splits up into benzoate and carbonate of calcium, from which the benzoic acid may be obtained without difficulty.—*Chem. and Drugg.*

Tannate of Bismuth.—Dr. Lederer, of Vienna, highly recommends this salt as a remedy for gastric and intestinal catarrh in children. It is administered, in cases of persistent diarrhœa, in quantities of 1–2 grams (15½–31 grains) *per diem*, and is advantageously combined with Dover's powder, if tenesmus is present.—*Pharm. Zeit.*, No. 102.

PRESCRIPTIONS AND FORMULÆ.

Cough Mixture.—In any severe cough, where the tongue is red or the throat sore, the following is recommended by Dr. Powell, of London.

℞ Potassii chloratis	gr. xi.	or	2.60
Morph. muriatis	grs. ij.	"	0.12
Glycerinæ	ʒ ss.	"	18.00
Syrupi	ʒ iiiss.	"	120.00

M. S. To be taken undiluted and slowly for both its local and constitutional effect.

Dose, one teaspoonful three or four times a day.—*Ohio Med. Rec.*

Pulmonary Alterative Pill.—Dr. Q. C. Smith, of Cloverdale, Sonoma Co., Cal., sends the following formula to the *Pacific Medical and Surgical Journal.*

℞ Quiniæ hypophosph	gr. xvi.	or	1.00
Arsenici iodidi	gr. i.	"	0.06
Calcii sulphidi	gr. xvi.	"	1.00
Ext. nucis vomicæ	gr. ij.	"	0.13

M. f. pil. xvi. One pill to be taken three times a day, just after meals.

He has found this prescription very efficient in the earlier stages of consumption, and also in certain cutaneous affections, and to correct the furuncular diathesis.

Transparent Glycerin Jelly.—

Dissolve Transparent soap		1 oz.
In	Water	4 oz.
	Glycerin	4 oz.

with the aid of heat. While still warm add

Glycerin	20 oz.

When cold, perfume to taste, and pour into glass jars. It is pale amber in color.—*Canad. Pharm. Journ.*

Lime Juice Cordial.—The following is said to make a highly satisfactory preparation:

Glucose	4 ʒ
Syrup	16 fl.
Lime juice	16 fl.
Water	28 fl.

Tinct. of lemon peel,
Orange flower water (triple) āā sufficient to flavor.

Opaque Glycerin Jelly.—

Mix in a mortar White soft soap		4 oz.
With	Glycerin	6 oz.
Then mix	Oil of thyme	4 ʒ
With	Almond oil	4 lb.

and add this gradually to the glycerin and soap, taking care to incorporate each portion thoroughly before adding any more oil.—*Canad. Pharm. Journ.*

Dr. Bergeron's Diphtheria Mixture.—

℞ Copaibæ	7 to 30 grs.
Aquæ menthæ pip	3 fl. ʒ
Alcoholis	6 fl.
Syrupi aurant. cort	½ fl.

A tablespoonful every two hours, in non-infectious diphtheria, to aid the disappearance of the false membranes.

Linimentum Terebinthinæ Aceticum.—Mr. W. Symons proposes an improved method for preparing this liniment, namely, either:

Turpentine	3 parts.
Liniment of camphor	3 "
Glacial acetic acid	1 part.

This contains 1 part of glacial acid in 7, while the Br. Pharm. directs the proportion to be 1 of the acid in 9 parts. If it is desired to make it of this strength, the following will, of course, be the formula:

Turpentine	4 parts.
Liniment of camphor	4 "
Glacial acetic acid	1 part.

A Good Cough Syrup.—Dr. Kessler, in the *American Medical Journal*, says: "We are called frequently in our every-day practice to make up a cough medicine for some of our patients. I have used all the expectorant formulas I have seen, besides a great many of my own mixtures, but so far I have obtained the most flattering results from the following:

℞ Picis liquidæ	20 gtt.
Spts. æther nitr	1 fl. ʒ
Syr. simpl	2 fl. ʒ M.

S. Teaspoonful night and morning. Very few doses will suffice in most cases."

Useful Formulæ.—Cubebs, Toronto, Ont., sends the following to the *Druggists' Advertiser:*

Extract of lemon.—Take one box of lemons, cut in small pieces and set aside with 20 pounds of white sugar and 16 gallons of diluted alcohol; stir occasionally for two weeks; drain off and put in a press and draw off as much as possible of the liquor; place again in a cask and add 4 gallons diluted alcohol, and let stand for a week; express again and mix with the former extract. This is put aside for future use.

Alcohol	20 gallons.
Oil lemon	75 ounces.
Extract as above	5 gallons.
Water	5 "

Mix the alcohol and oil of lemon well together, then add the extract; let these stand with frequent agitation for two or three days, then add the water, mix well and let it stand for two or three weeks and then filter. (This will turn milky after the water is added, but it will clear.) I have made up hundreds of gallons of this, and it yields a good result. It is the most fruity extract that can be made.

Florida Water.—We have found the following to be a good working formula.

Oil bergamot	4 ounces.
Oil lemon	6 "
Oil cloves	6 drachms
Oil lavender	1 ounce.
Alcohol	3½ gallons.
Aqua	6 pints.

Mix; add water after two days.

Villatés' Mixture in the Treatment of Sinuses.—In several deep sinuses under treatment in Charity Hospital, N. Y., in which no necrosed bone could be found, but which proved intractable to heal, Villatés' mixture was injected, first of half strength and then full strength, once a day. The following is the composition of the mixture:

℞ Liq. plumbi subacet	ʒ i.
Zinci sulph. cryst.,	
Cupri sulph. cryst	āā ʒ ss.
Aceti vini albi	ʒ viss.

Mix.

A Nervine and Antispasmodic.—A favorite prescription in the Hospital of Chest Diseases, London, is the following, useful in epilepsy, chorea, dysmenorrhœa, hysteria epileptica, and like nervous conditions:—

℞ Potassii bromidi	gr. x.
Tinct. conii	♏ xxx.
Tinct. valerianæ ammon	♏ xx.
Aquæ camphoræ	fl. ʒ i.

For one dose, thrice daily.

Ancient Ink.—To imitate old manuscripts, etc., take 1 drachm of saffron, infuse it into ½ pint of nut-gall ink, and warm it over a gentle fire. Whatever is written with this will appear as if of many years' standing.—*Can. Ph. Journ.*

Dressing for Leather.—Castor oil mixed with an equal weight of tallow or other oil is an excellent dressing for leather. Besides this, neither rats, cockroaches, or other vermin will attack leather so prepared.

Remedy for Sweating Hands or Feet.—A writer in the *British Medical Journal* recommends for this the painting of the surface affected, with the tincture of belladona. An ointment of the same could also be offered with advantage in certain cases. In case of the hands, a "bracelet" painting of the tincture about the wrist has proven successful.

Adhesive Liquid for Metal.—Soften half an ounce of common glue, add about a quarter of an ounce of coarse sugar or candy, and half an ounce of gum-arabic; boil and stir carefully. Useful for applying labels to tin. When reduced to dryness, forms a good "marine glue." —*Monthly Mag. of Pharm.*

Glue to Resist Fire.—Mix a handful of quicklime with four ounces of linseed oil, boil to a good thickness, then spread on some plates in the shade, when it will become exceedingly hard, but may be easily dissolved over the fire, and used as ordinary glue.—*Monthly Mag. of Pharm.*

Harness Soap.—Take resin soap, 2 lbs.; sperm oil, ¾ lb. Digest the soap with a quantity of boiling water just sufficient to thoroughly soften it, when it may be triturated with the warm oil and a sufficient quantity of fine boneblack until a uniform paste is obtained. Ordinary unmixed soap turns brown many of the black pigments in use. The addition of oil is a great improvement.

Composition for Removing Paint.—Mr. H. P. Heyhoe, of Stowmarket, has recently patented a preparation which will soften paint, varnish, or japan, so that they can be easily removed from old surfaces, and which can also be used for removing oxide or dirt from the surface of metals, and, when diluted, for cleaning paint, etc. It is a solution of caustic soda, about twice the strength of that in the Pharmacopœia, made from quicklime and common carbonate of soda, and containing, in about 140 gallons, 30 lbs. to 35 lbs. of treacle and 10 stones of flour. A gallon of carbolic acid has to be added to this quantity to prevent decomposition. It is difficult to see the advantages this mixture has over a solution of caustic soda of the same strength.

To Destroy Moths.—The *American Aggriculturist* states that benzine will utterly destroy moths, eggs, and larvæ. If furniture, furs, flannels, wool, etc., containing moths, be thoroughly saturated with benzine once, this will be sufficient, and the odor of the benzine will pass off in a few days.—The foregoing formulas are copied from the *Chemist and Druggist.*

Oil of Eggs: a Valuable Recipe.—A German apothecary's apprentice describes the mode of preparing "oil of eggs" as follows: "I call on the lady of the house for one dozen of eggs; I boil the eggs, separate the yolks from the whites; the clerks eat the yolks, the white is for the apprentice; into the bottle I pour oil of poppy seed."

Bleaching Vegetable Tissues.—It is stated that a cold 5 to 6 per cent solution of borax will remove all the red, blue, purple, or violet coloring matter from vegetable cells, leaving the green chlorophyll intact.—*Amer. Quarterly Microscop. Jour.*

Dog Fennel.—One of the chamomile species (*Maruta cotula* L. or may-weed; dog-fennel) growing in the back lanes of our towns throughout the country, possesses the stomachic and tonic properties of the chamomile of the shops. In addition, the leaves of the plant contain a principle almost identical with cantharidine. When bruised and applied to the skin they produce prompt and active epispastic effect. This is much used by the negroes in the south as a vesicant.

A Patent-Medicine man posted hand-bills in every available spot in the village the other morning, and before night fifteen goats had enough medical information in them to run an eclectic college.—*Exchange.*

CORRESPONDENCE.

NEW YORK.

New York Pharmaceutical Association. — The undersigned has already published a communication in the *Druggists' Circular* urging the formation of a Pharmaceutical Association among the fraternity of this State.

Similar organizations exist in twelve or more of the States, and they have invariably been of great value to its members, and an advantage to the public in general.

In further explanation of the proposed organizations, let me say as to its membership and objects, that it should be based on broad and liberal principles. The Constitution and By-Laws of the American Pharmaceutical Association should be the general guide in organizing the State Society.

For membership, the qualifications demanded should be, good moral character and an experience of four years in the business, and any one engaged in the business, whether wholesale or retail or an employee, and who is recommended by two persons, should be eligible for election to membership.

Fees. These should be moderate, as there is no necessity for salaried officers or expensive outlays.

Its object. To awaken a more thorough interest in pharmacy throughout our State, and by social intercourse, scientific research, and active interest in our own calling, to create a better state of feeling and also to improve the modes of business to mutual advantage. During the past twenty years, the writer has attended all the annual meetings of the American Pharmaceutical Association but two (1866 and 1878), and he *knows* from personal experience the great value and satisfaction they always are, not only to those who attend, but also to the members who, prevented from attendance, receive the volume of its proceedings. He has also attended meetings of the State Associations of Vermont, Rhode Island, Connecticut, and New Jersey on several occasions, and has seen their value and usefulness to the druggists of those States, and he *knows* that such an organization in this State *cannot fail* to rival any of them in every respect.

Already very many responses have been received, and it would seem that the time is ripe for this organization to be perfected in this State. Will the readers of NEW REMEDIES have the kindness to communicate their views as to their willingness to co-operate in forming this organization to the undersigned, as also the time of the year most agreeable to them, and place they would prefer for the meeting to organize this association. Thus far the latter part of May seems the more suitable time, and Saratoga Springs the place preferred by the larger number.

Very respectfully, P. W. BEDFORD,
P. O. Box 1,738, or No. 10 Gold St., New York.

PHILADELPHIA.

Meeting of the Alumni Association of the Philadelphia College of Pharmacy.—The sixth of these social and conversational meetings was largely attended.

MR. MATTISON read an interesting and exhaustive paper on Dialyzed Iron, which in our opinion sets at rest the long mooted question of its sphere and usefulness as a therapeutic agent. He reviewed its origin from Europe, and how it was heralded here to such an extent that a great demand sprang up. He estimated that more than one hundred barrels of it were imported the year after its announcement. It was flamed about as the *grand remedy* to rebuild the system, to vivify and recruit the blood globules. The journals teemed with notices, some disinterested, others to favor their advertisers, representing it as the only preparation of iron worth having. The English press spoke of it as protoxide of iron containing a small quantity of water, that it assimilated nearest to the form of the iron contained in the blood, etc., it did not consti-

pate, etc., and very pleasant to take, as we all know—such statements excited attention from chemists and others, of course. But the result of time and thorough trial has proved that in this case, as in many others, "new medicines," like new friends, are charming. Many distinguished practitioners, who at first were enraptured with it, have been compelled to admit its inefficacy and its inferiority to the old preparations in use and its great use will be as a remedy for arsenical poisoning, preceding its administration by a teaspoonful of salt and following the dialyzed iron with an emetic (see p. 328, NEW REMEDIES, 1877).

Mr. Mattison had sent a circular letter to a number of physicians, and the replies confirmed the above. He had experimented on a number of cats and, though he gave a drachm of arsenic, he did not succeed in killing the animals, but those to whom dialyzed iron was administered recovered immediately. He instanced several cases of successful treatment of human subjects accidentally poisoned with arsenic. He stated that the first make in this country was by the Blairs of Philadelphia. He gave the different methods of its preparation in Europe and this country, and the difficulties encountered, especially in the manufacture on a large scale. He believed the only way to obtain results from its use was hypodermically, and said in conclusion that it was very much against his pecuniary interest as a manufacturer to make these statements.

MR. KENNEDY knew of some cases where good results had apparently been obtained from its use; he thought it was very important to know the quantity of oxide contained in products of different makers.

MR. SAYRE had expressed the same views as Mr. Mattison a year ago, and was glad to find that his friends, who differed from him then, now coincided it was inert, being a colloid and not a chemical preparation, but a mere solution of oxides and chlorides.

DR. MUNAY read from NEW REMEDIES, of July, 1871, p. 55, Rules for Druggists, written two centuries ago, which was very amusing, especially "He shall originate new medicines;" the members seeming to think that many had quite filled their mission in latter times.

MR. SAYRE made some remarks to those students present who were soon to undergo their examination for the degree. He advised them to skeletonize the questions and answer all as far as they could, and not be carried away by one idea only in the inquiries.

MR. KENNEDY had his attention called to adulterated powders of gum-arabic and found starch to be the sophistication, it was done in such a bungling manner as to indicate that the retailer had added it. Among six specimens he found one mixed with starch and one with dextrine. A discussion on this and other kindred matters ensued, MR. ELLIS remarking that the tone of the wholesale trade had greatly improved during the past thirty years with regard to the quality of powders.

E. E.

CALIFORNIA.

Dinner and Gathering of the Alumni of the Philadelphia College of Pharmacy in San Francisco.—On the evening of Tuesday, December 17th, 1878, in compliance with invitations, most of the members of the Alumni of the Philadelphia College of Pharmacy residing on the Pacific coast assembled in the parlors of the Palace Hotel, as the guests of Mr. Henry S. Wellcome.

Besides those of the Alumni, there were present, as special guests, Prof. Henry Gibbons, Sr., M.D., editor of the *Pacific Medical and Surgical Journal*, who attended one course of lectures at the P. C. P. in 1827; also Prof. Wm. Searby, of Cal. College Pharmacy, and Mr. James G. Steele. After being very cordially received by the host and a hearty interchange of greetings of college friends after long separation, the company was conducted to the dining-room, which was handsomely decorated for the occasion. Throughout the dinner a most happy spirit of conversation was kept up, many old college jokes were recalled and interspersed with items of serious thought and scientific interest. After dinner the company returned to the parlors, and Mr. Wellcome briefly addressed the guests, expressing his pleasure in meeting the fellow-graduates of this coast, and said: "The meeting together of graduates from the same college should be like the meeting of brothers reared at the same home fireside; I trust this gathering will be such with us, and result in the cultivation of more intimate relations in future, and I offer a cordial geeting to my special guests, who have earned distinction in the profession.

"I wish you to consider this an informal social reunion, and, departing from the customary order of such occasions, would request all to participate in offering tributes or eulogistic toasts to such persons as have done honorable service in our college, or have distinguished themselves by their efforts to advance the knowledge of pharmacy, and it will be pleasant to hear reminiscences of college incidents that may be recalled to mind. In offering you a toast, gentlemen, I thank you for the compliment you do me by your presence, and I wish you all good things!" Dr. Gibbons responded, and then offered a toast to the Philadelphia College of Pharmacy, giving some of his recollections of the early days of the college and its first officers and teachers; he spoke of the vast changes and improvements during the past half-century, and paid high compliments to the men to whose energy we are indebted for the success of the college. Responded to by Mr. Wilson ('78).

Professor Wenzell offered a toast to "Dr. Dilwyn Parrish, the venerable President of our Alma Mater, who has so long and faithfully stood at his post; may his life be spared for many more years of health and happiness." Professor Painter offered a toast to "Dr. Robert Bridges, senior Professor of the College, revising editor of Fownes' Chemistry; he has filled the chair of Chemistry ably for many years, and now, at an advanced age, remains faithful to his charge; his name is respected by every student."

Mr. Brown ('76), offered a toast to "Prof. Jno. M. Maisch, who fills with distinction the chair of materia medica, and equally so the editorial chair of *American Journal of Pharmacy*, and holds the office of Permanent Secy. of Am. Phar. Ass'n. A man of eminent ability and wonderful zeal, Prof. Maisch enjoys a warm place in the heart of every acquaintance, and doubly so with students, whom he has led through seemingly tangled and arduous paths to the goal of their ambition."

A toast was offered by Mr. Hudgin ('78), to "Prof. J. P. Remington, who fills the chair of Pharmacy. Although junior professor, so ardent and efficient have been his labors, that his ability has far outgrown his years."

Later in the evening toasts were offered to the following: Thos. Wiegand, Emil Scheffer, Fred. Hoffman, Edward C. Jones, Edward R. Squibb, M.D., Chas. Rice, C. Lewis Diehl, Chas. Mohr, Wm. Saunders, Prof. Ebert, Chas. Tuffts, Dr. Henry Cummings, Prof. A. B. Prescott, our host, and many others. Touching tributes were offered to the memory of Thos. Powers, Prof. Proctor, L. Brinkhurst, and others who have gone before, leaving us the results of their lives' devotion to the cause of Pharmacy. Other names held in high respect were mentioned, but want of space forbids further detail; the toasts were interspersed with comments both humorous and serious. In the words of one of the guests, it was a delightful intellectual entertainment, happily conceived and feliciously rendered, an occasion long to be remembered by those who had the pleasure of being present. This is the first gathering of our graduates that has ever been held on this coast, but we trust that it will not be the last.

I. I. BROWN.

Hæmoglobin is the name of a new preparation, represented to be the "Albuminoid Ferruginous Principle of Blood," made by C. Crinon of Paris. It is recommended as an excellent tonic.

CONNECTICUT.

Connecticut State Pharmaceutical Association.—The Fourth Annual Meeting of the Connecticut State Pharmaceutical Association was held at Hartford, on Wednesday, February 5th, the meeting being called to order at 11 A.M., in the Odd Fellows' Hall. The President, H. H. Osgood of Norwich, was in the chair, and fifty members were present.

Following the reading of the President's address, the following Committees were appointed for the ensuing year.

COMMITTEES.

On the President's Address, E. S. Sykes, I. F. Main, and N. Dikeman; *On Nominations*, S. R. McNary, N. Dikeman, L. I. Monson, I. F. Main, and J. F. Nichols; *On Code of Ethics*, L. I. Monson, A. F. Wood, and S. Goodrich; *Executive Com. and Com. on Local Formulæ*, L. I. Munson, A. F. Wood, and S. R. McNary; *Queries and Progress of Pharmacy*, I. F. Main, J. K. Williams, and N. Dikeman.

Names of members from which the Governor is to select two persons to serve on the *Examining Board* under the Pharmacy Act, if adopted, Samuel Noyes, S. Goodrich, I. F. Main, E. S. Sykes, L. I. Monson, and S. R. McNary.

Delegates to the Amer. Pharm. Assoc., S. Goodrich, A. F. Wood, I. F. Main, Dwight Phelps, and W. A. Thompson.

The Report of Treasurer showed a balance in Treasury of $394.36.

The Report of Executive Committee, offering suggestions of importance and reviewing the events of the year, was received with much interest, and a deserved tribute was paid to the memory of Alfred Daggett, of New Haven, deceased, who was the first to move in the organization of the Association, and nearly up to the time of his death was its Secretary.

A proposition to amend the Constitution so as to have the annual meeting held in May was laid over until next year.

A report of the Delegates to the A. P. Assoc. was read by Mr. Wood of New Haven, who urged, in closing, the importance to all pharmacists of union with and attendance at the National Association.

ANSWERS TO QUERIES.

The following papers were read in answer to queries accepted at the last annual meeting.

1. What position should the members of this association take in regard to the sale and use of proprietary medicines?

MR. E. W. THOMPSON, of New Britain, in responding, said that proprietary medicines were part of the legitimate business of the pharmacist, who should supply the demand of the public, provided the articles were not intended for illegal or illegitimate purposes. Every pharmacist should abstain from advertising, recommending, or forcing them on the public.

2. Is the practice of prescribing over the counter consistent with the profession and occupation of a pharmacist?

MR. E. S. SYKES, of Hartford, in responding, justifies the pharmacist in advising simple remedies where the case is one which does not require a second inquiry from the patient. In the discussion which followed it was stated that the physicians of Hartford made no objection to counter prescribing of simples when the patient *did not need* house visitation.

3. The manufacture and sale of pharmaceutical preparations by wholesale druggists and others. What is its effect upon the proper education and training of the pharmacist of the future?

W. DIKEMAN, of Waterbury, responded by tracing much of the demand for such preparations to the imposition of importunate salesmen upon credulous physicians, and thus compelling their purchase, whether or no, by the pharmacist. Its effect would be to demoralize and lower the standard of our business, and send out half educated young men in the future.

4. Can an elixir be made from calisaya bark which shall contain all the alkaloids from an ounce of the bark in *one* pint of elixir, and be capable of dissolving iron salts without precipitation?

I. F. MAIN, of New Britain, in reply to this query exhibited samples and gave formulas for the elixir plain, and also with two of the iron salts, which were very excellent preparations and corresponded with the above claim. The plan adopted was to obtain the alkaloids by a process like that in the U. S. P. for quinia, dissolving, adding the necessary diluents, and flavoring.

5. Beef, Wine and Iron.—The published formulæ for this preparation do not make a stable preparation or one which compares favorably with that sent out by elixir manufacturers. Give a formula which will make a preparation that will not spoil or precipitate within a reasonable time.

FRED. WILCOX, Waterbury. This writer gave as his opinion that no combination of this nature could be made which would not precipitate in a short time, and that all the so-called preparations now in the market have this fault. There was no trouble in preparing an article of beef which was entirely satisfactory, but as yet he had not been able to make the mixture with iron and wine that was to his notion. Doubtless Mr. Wilcox will pursue this question and report next year.

"The Officinal Tincture of Rhubarb," was the subject of a paper by MR. RAPELYE, of Hartford, who gave as the result of his experiments that two parts of alcohol, one part each of water and glycerin, largely prevented the formation of a precipitate, the composition of which he had found to be gummy matter, chrysophanic acid, etc.

OFFICERS ELECTED.

President, H. H. Osgood, of Norwich; *Vice-Presidents*, S. R. McNary, of Hartford, and Lomanta Wells, of New Haven; *Secretary*, Frederick Wilcox, of Waterbury.

During the session sixty new members were admitted, raising the total membership to 175. At the close of the evening session, Professor P. W. Bedford, who was present, was made an honorary member, and addressed the members, impressing upon them the importance of sustaining their association, and pointing out the extremely interesting courses of study which lie in the field before them, such as botany, materia medica, etc.

Henry B. Steele, of Norwich, Ct., was likewise elected to honorary membership.

QUERIES FOR 1879.

1. How far is a pharmacist warranted in differing from the officinal formula of the U. S. P. in making the preparations there described?

2. Our stores are becoming too much "places of business." What can be done to encourage our young men to become better pharmacists?

3. What position should members of the association take in regard to the sales of wines and liquors? Is the tax imposed on us an unjust one?

4. What officinal or other medical plants are indigenous to the State, and can any such be gathered or cultivated so as to prove profitable?

5. Much of the beeswax, both bleached and unbleached, found in the market is adulterated. State the adulterants, and how they may be detected.

6. Elixir pepsin with bismuth is prescribed by physicians and supplied by elixir manufacturers. Can such a preparation be made which shall possess the medical qualities of both drugs?

7. What is the best inodorous disinfectant for sick-rooms and closets which is salable in bulk?

8. The proprietary dietetic preparations of the market. What are their constituents? Can they be prepared on a small scale?

9. Hints on dispensing.

EXHIBITION OF DRUGS, ETC.

One of the most interesting features of the meeting was the large exhibition of specialties in fine chemicals, materia medica specimens, rare aniline products, apparatus, etc., by Powers & Weightman. Preparations of exceeding purity and of recent discovery, by Lazell, Marsh & Gardiner, represented by Prof. Bedford and Mr. McLaughlin. Specialties in hypophosphites and new iodine preparations by Mr. Robt. W. Gardiner. Schieffelin's fine soluble-coated pills Warner's sugar-coated pills were exhibited in infinite variety and attracted much attention.

The association finally adjourned to meet in New Haven on the first Wednesday in February, 1880, at 10 A.M.

MASSACHUSETTS.

Boston Druggists' Association.—The fourth annual meeting of the Boston Druggists' Association, which is composed of the leading wholesale and retail druggists of Boston, as well as chemists, druggist sundrymen, and coordinate branches of trade, was held at the Parker House, January 28th, at three o'clock. The President, Dr. Thomas L. Jenks, in the chair, and Mr. Wm. F. Horton Secretary. Mr. S. K. Bilman presented the report of the Committee on Stamps on Proprietary Medicines.

The Committee on Membership reported on the names of fifteen (15) gentlemen and they were elected.

The report of the Treasurer, Mr. S. A. D. Sheppard, was submitted, from which it appeared that the amount on hand at the beginning of the year was $801.30; received during the year, $375.47; expended, $280.44, leaving a balance of $896.33.

The association then proceeded to the election of officers, and the following gentlemen were elected:

President, Nathaniel J. Rust; *Vice-Presidents*, Joseph Burnett, A. Sigourney Bird; *Secretary*, Wm. F. Horton; *Treasurer*, S. A. D. Sheppard; *Executive Committee*, Thomas Dolker, E. Waldo Cutter, Prof. G. F. H. Markoe, J. S. Melvin, C. C. Goodwin, J. S. Orne, J. B. Patten; *Committee on Membership*, Solomon Carter, D. G. Wilkins, R. R. Kent. Henry Canning, A. R. Bailey.

The president elect being conducted to the chair, returned his thanks for the honor conferred, and expressed the wish that the pleasant relations that had existed between himself and the members of the association for the last quarter century would continue.

The president was authorized to appoint a committee to act in connection with the Massachusetts College of Pharmacy for the purpose of procuring a suitable badge to be worn on public occasions by members of the trade and profession.

THE BANQUET.

At half-past five o'clock the company sat down to the annual dinner; about ninety gentlemen were present, including His Honor Mayor Prince, Collector Beard, Hon. Geo. P. Carter, A. L. Calder (Providence), Wm. A. Brewer (New York), John J. Brown, now the oldest druggist in the city, Dr. Thomas Waterman, C. L. Williston, representing the house of Chas. Pfizer.

The cloth having been removed, appropriate toasts and responses were made on the President of the U. S., the Commonwealth of Massachusetts, the cities of Boston and New York, the Press, the Medical Profession, the Boston Board of Trade, the Paint and Oil Trade, the Manufacturing Chemists, etc.

During the evening the Webber Quartet entertained the company by some fine singing.

The festivities were continued till a late hour. Mr. Rust made an admirable presiding officer and by his happy introductions of the speakers contributed greatly to the success of the entertainment. MARION.

A Large-Leaved Plant.—In the botanical garden at Munich flowers at present an Abyssinian plant—*Musa Ensete*, the leaves of which have the extraordinary length of 5 metres (16 feet 4 inches).

ITEMS.

Lunacy in New Zealand.—The total population of New Zealand at present is 414,000 persons, exclusive of 40,000 natives (Maories). There are no fewer than 8 lunatic asylums, of which the largest is at Dunedin; this has accommodation for 208 lunatics. But, though there are so many asylums, the room is quite insufficient, as 898 lunatics were crowded into wards built for 639. The expenditures amounted to £37 8*s*. 11½*d*. per head.—From *British Med. Journ.*

A Miraculous Healer in Sonoma County, Cal.—Some of the people in Sonoma County are crazed about a certain woman who lives on the "top of the mountains" not far from Cloverdale, a Mrs. E. Preston, who claims to have received the gift of healing. Scores of patients are running to her for help. She asks no questions, for she knows nothing about disease, but prescribes "wine bitters" of her own making and "paint" to rub with, which blisters the skin. She has cured blindness and cancer, has taken three lizards from the stomach of a man and a "water dog" from another, and she has even cured a woman of the "hollow horn!" She is a religious woman, and pursues her vocation from a sense of duty to her Maker, but takes care to get the pay from her patients. She has a moustache and goatee, and in these probably lies her strength. It is the old story repeated. Thousands of such miraculous healers have appeared at different times and run their course for a season. They always find fools enough to feed on.—*The Am. Med. Bi-Weekly.*

Copying Drawings.—There has been furnished a brief account of the handy process used at the School of Mines (Columbia College) for copying mechanical drawings and plans, by a sort of photography. The original drawing must be on tracing or transparent paper. No camera is required. The process simply consists in laying sensitized paper with the prepared side uppermost, on a board covered with two or three thicknesses of flannel, spreading the tracing that is to be copied on prepared paper; covering the whole with a sheet of glass about three-eighths of an inch thick, and exposing the arrangement to sunlight for six to ten, or diffused daylight for sixty to ninety minutes. The copy is then to be washed in clean water thoroughly and hung up to dry. P. Barnes related these particulars recently before the American Institute of Mining Engineers, and specified also the method of preparing the sensitized paper. One solution is made of 1½ ounces citrate of iron and ammonia in 8 ounces of water; another of 1¼ ounces red prussiate of potash in a like quantity of water. The water must be pure. These solutions are to be mixed and kept in the dark or in a yellow bottle. The mixture is to be applied to paper on one side only, with a sponge, most conveniently by twice passing the sponge over, first quite wet, and secondly squeezed nearly dry. The paper is then hung up by a corner to dry, and must then and afterwards be kept in the dark till used. It should be of a full yellow-bronze color when prepared. It will be noticed that this method differs from one that has been previously described, in the circumstance that a mixture of the solutions is used, instead of two separate dippings of the paper, but the probability that the mixture could be so used was then foreshadowed. The whole process is new, and has lately become popular from its convenience.

A Hard Troche.—A New York paper says that a popular doctor in that city, while escorting a lady home the other evening, attempted to relieve her cough and sore throat by giving her a troche. He told her to allow it to dissolve gradually in her mouth. No relief was experienced, and the doctor felt quite chagrined the next day when the lady sent him a trousers button, with a note, saying that he must have given her the wrong kind of troche, and might need this one.—*Exchange.*

The Plague in China.—The late Dr. David Manson, writing from Amoy, in the China Imperial Maritime Customs Medical Reports, gives the following notes, by Mr. E. Rocher, upon the plague in Yünnan :

The sickness known in Yünnan under the name of Yang-tzu, and which appears to be nothing else than the plague, carries off yearly many victims from that province.

According to the men of note of the various districts, the disease appears to have been imported from Burmah. It is exceedingly difficult to say when it was first introduced. The learned say—and a great part of the population hold the same opinion—that the centre and east of the province were exempt from the plague until the outbreak of the rebellion ; while others assert that it had appeared in the extreme west, near Talifu, several years before this date. It is extremely difficult to fix these dates ; but, supposing the last statement correct, the disease must have passed over very lightly, seeing that neighboring districts were not cognizant of its presence. Since the commencement of the civil war, however, it has spread over the whole province, decimating the population.

There is a fact that inclines one to think that the epidemic is owing to exhalations from the soil, and it is this: those animals which live in the ground, in drains or in holes, are the first to be attacked. This is particularly noticeable with the rats. As soon as these animals are ill they leave their holes in troops, and, after staggering about and falling over each other, drop down dead. The same phenomenon occurs in the case of other animals, such as buffaloes, oxen, sheep, deer, pigs, and dogs. All are attacked, but the dog less severely than the others.

When these phenomena appear, it is not long before the disease spreads to man ; and, knowing this, the people take every precaution to guard themselves from the plague. They begin to purify their houses by lighting fires in every room, and in certain towns they abstain from pork. In man the disease commences with a slight fever, which rapidly increases, and in a few hours becomes very violent. The patient clamors for drink, and his thirst is insatiable. By-and-by a dark red swelling shows itself in the armpits, groins, or neck, and the fever continuing to augment, the patient becomes rapidly unconscious. The bubo increases till the second day, after which it remains stationary, and when it has attained its full size it is about as large as a hen's or goose's egg. At this stage consciousness returns, but there is still great danger ; for if the swelling, which up to this point is very hard, becomes soft, and if the fever still continues, the case is considered hopeless. On the contrary, if the tumor opens externally, which is a very rare occurrence, there is a chance of recovery. Some Chinese physicians have attempted to cut these tumors ; but either they have delayed the operation till too late, or else they have performed it imperfectly, for few have survived this treatment. Many of the practitioners whom I have seen at work do not hesitate to declare themselves powerless ; and instead of giving a quantity of medicine, as is their practice in ordinary cases, content themselves with prescribing large doses of musk as a last resource.—*Louisv. Med. News.*

Late Marriage.—A Polish journal, published at Kalisch, relates the following extraordinary fact. In a village in Russian Poland lives a Jewish widow one hundred years old. She resides with her daughter, who is aged eighty-four, and is herself the great-great-great-grandmother of a girl aged thirteen. Notwithstanding her advanced age, the widow is strong, goes out alone, hears and sees perfectly well, and has retained her mental powers. She is about to marry again. The bridegroom is much younger than the bride, having only reached the age of eighty-eight ; he belongs also to the Jewish race.—*Brit. Med. Journ.*

Methylic Alcohol or Wood Spirit.—It is known that methylic alcohol or wood spirit is extensively used in adulteration of spirits of wine destined for commerce. Some recent observations by a medical professor in Nancy, M. Poincarré, seem to show that its use is apt to give trouble. He made some animals live several months in an atmosphere, renewed, indeed, but constantly charged with vapors of methylic alcohol, and found that they became subject to various disorders. One notices first a tendency to *embonpoint*, owing to abnormal development of the abdomen. This is chiefly due to enlargement of the liver, which shows fatty degeneration, as do also the heart and the lungs. The brain is congested and the meninges are inflamed, etc. As many workmen—*e. g.*, hatters—live in an atmosphere charged constantly with vapors of wood spirit, the facts just given should be taken into serious consideration by hygienists.

Dr. John B. Biddle, whose death took place in Philadelphia on the 19th of January, has long been known as the Professor of Materia Medica in Jefferson Medical College. He was the son of Clement C. Biddle, and was born in Philadelphia, on the 3d of January, 1815. He was a graduate at St. Mary's College, Baltimore, and studied medicine in the University of Pennsylvania. With Dr. Meredith Clymer (now in New York) he started in 1842 *The Medical Examiner*, and two years later, he became one of the founders of the Franklin Medical College. On the breaking up of that school he accepted the chair of Materia Medica in the Jefferson Medical College, of which institution he was the Dean until death. His treatise on Materia Medica, which is so well known to medical students in the United States, was written, originally, for the use of his own class. Among other positions held by him were the Presidency of the Board of Inspectors of the County Prison, and Attending Physician to the Deaf and Dumb Asylum, and of Girard College. He was likewise President of the Association of American Medical Colleges.

Gold in Siberia.—The *Obzor* contains the following telegram from Krasnoiarsk :—"On October 16th, a steamer, accompanied by the barge *Moskva*, arrived at Veniseisk from Cronstadt. The steamer completed her voyage, 2,500 versts, up the Yenisei to that town. Nature, in token of welcome, before the arrival of the steamer, presented from her bosom a nugget of gold unique of its size in Russia, and perhaps even in the world. This nugget was found by the Veneseisk merchant Matopin, on the bank of the Angar, about 100 versts from

Yeniseisk. The steamer *Lena* also advanced about 3,800 versts up the Lena, as far as Yakutsk. The enterprise of Nordenskjöld will have important consequences. It may be affirmed that all the principal rivers of Siberia are now open to European commerce."—*Brit. Trade Journ.*

Substitute for Tobacco.—Patent No. 210,538, issued from the U. S. Patent Office Dec. 3d, 1878, states the ingredients of this new "Substitute" to be: Spikenard, red clover, hyssop, hops, slippery-elm bark, *tarred rope*, pennyroyal, mullein leaves, kinnikinic, wild-cherry bark, and ginseng. The happy inventor is Joseph P. R. James, of Reed's Landing, Minn.

Hon. Hugh H. Osgood, President of the Connecticut Pharmaceutical Association, was born in Southbridge, Mass., October 10th, 1821. Soon after his birth his parents removed to Pomfret, Ct., and resided there until 1835, when they again removed to Norwich, Ct., where the son enjoyed the unusually good school advantages of that city until he entered the service of Samuel Tyler & Son, druggists, as apprentice in 1836. He remained with them until 1842, acquiring a complete knowledge of the business in all its details, when he associated with Dr. Lee, of Windham, under the firm name as now of Lee & Osgood, Wholesale and Retail Druggists. In 1865, his partner, Dr. Lee, died, since which time the large and constantly increasing business has been conducted solely by him with uninterrupted successs.

He was "Chief of Staff" under the late Governor Buckingham, during his entire gubernatorial term of eight years, and is now, as he always has been, identified with many of the leading business interests in and about Norwich. In 1875, he was elected mayor of the city, to which position he has since been re-elected, and so upright and popular has been his administration of its affairs that there is no desire for a change.

The association at its recent meeting re-elected him to be its President for the ensuing year.

Killed by Snakes and Wild Beasts.—In an interest-report on Sanitary Measures in India, which has just been presented to Parliament, it appears that 21,682 fatal cases from attacks of wild animals had occurred in ten provinces, the largest being in Bengal, viz., 10,062. The deaths from snake-bites alone in the Punjab last year were 828, against 979 in the preceding year. As showing the rapidly fatal effects from the bite of a cobra, the commonest and the most deadly of Indian poisonous snakes, Surgeon A. J. Wall states that one night, about half-past twelve o'clock a Hindoo punka-coolie, aged forty, while sleeping in the verandah of the doctor's house, was bitten on the shoulder by a snake about three feet long. The noise and confusion soon awoke Mr. Wall, who at once hastened to the assistance of his servant, and after waiting for a short time for some ammonia, he proceeded to inject it, as recommended by Sir Joseph Fayrer and Professor Halford, previously giving the patient plenty of brandy, walking him rapidly about, etc.; yet, notwithstanding all attention, the man died in sixty-five minutes after the attack. So, adds Mr. Wall, the remedy administered had as little effect on the symptoms (which he graphically describes) as it had on the result.—*Louisv. Med. News.*

American Exhibitors at the Mexican Exhibition.—A correspondent of the *N. Y. Tribune*, writing from Mexico, describes the opening of the Exhibition on the 23d of January, and remarks that Parke, Davis & Co., of Detroit, Mich., have one of the most attractive exhibits in the building. It is decorated with flags of the United States and Mexico, and includes specimens of their chemical preparations.

PHARMACEUTICAL CALENDAR FOR MARCH.

Day of Week.	Day of Month.	Society Meetings.
Tuesday	Mar. 4.	Phila. Coll. of Pharm.—Trustees' Meet. 4 P.M.
		Pittsburgh Coll. Pharm.—Trustees' Meet.
Thursday	" 6.	Louisville Coll. Pharm.—Pharm. Meet.
		N. Y. Coll. Pharm.—Trustees' Meet.
Monday	" 10.	Louisville Coll. Pharm.—Annual Meet.
		N. Y. Coll. Pharm.—Alumni Assoc.
Tuesday	" 11.	Chicago Coll. Pharm.—Trustees' Meet.
		St. Louis Coll. Pharm.—Pharm. Meet. 8 P.M.
Wednesday	" 12.	Cincinnati Coll. Pharm.—Pharm. Meet.
Thursday	" 13.	Louisville Coll. Pharm.—Directors' Meet.
		Phila. Coll. Pharm. Al. Asso.—Pharm. Meet.
		N. Y. German Apothecaries' Soc., 160 Third ave.
		Newark Pharm. Asso.—Annual Meet., 3 P.M., room 4, Library Building.
		Maryland Coll. Pharm.—Annual Meet.
Monday	" 17.	Phila. Coll. Pharm.—Annual Meet.
Tuesday	" 18.	St. Louis Coll. Pharm.—Board of Trustees.
		St. Louis Coll. Pharm. Al. Asso.—Scient. Meet.
		Kings Co. Pharm. Asso., 120 Myrtle Ave., Brooklyn.
		Pittsburg Coll. Pharm.—Pharm. Meet.
		Phila. Coll. Pharm.—Annual Meet. 4 P.M.
		N. Y. College of Pharm.—Commencement and Celebration of Fiftieth Anniversary.
Wednesday	" 19.	Phila. Coll. Pharm.—Commencement at the American Academy of Music.
Thursday	" 20.	N. Y. Coll. of Pharm.—Annual Meeting.
Monday	" 31.	Phila. Coll. Pharm.—Annual Meeting.

NEW REMEDIES—SUPPLEMENT.

VOL. VIII. No. 3. MARCH, 1879. WHOLE No. 57.

ROUGH DRAFT OF A PROPOSED LAW TO PREVENT THE ADULTERATION OF FOOD AND MEDICINE, AND TO CREATE A STATE BOARD OF HEALTH.

BY E. R. SQUIBB, OF BROOKLYN.

To the Medical Society of the State of New York:

The subject of a law to prevent the adulteration of food and medicine has throughout the past year been under consideration by a joint committee made up of representatives from the New York Academy of Sciences, the New York Academy of Medicine, the Medical Society of the County of New York, the Therapeutical Society, New York College of Pharmacy, New York Medico-Legal Society, the Public Health Association, and the American Chemical Society, and considerable time has been devoted to the examination of the subject; and two or three drafts of laws besides this have been prepared and submitted to discussion.

After a review of some part of the experience of Great Britain under the "Sale of Food and Drugs act," of 1875, and a consideration of the chief difficulties it has encountered up to this time, the present writer believes that any law, to be effective and of easy application, must carefully avoid certain points of difficulty which have been brought out by the British law.

First, the law must so clearly define the offence of adulteration in all its various forms, even by repetition in wording the definition where this may be useful, as to make the various forms of the offence plain to the understanding of the persons who adulterate, rather than by general definitions to leave too much to be decided only by litigation in the courts. If the offence be well defined to the person who adulterates, the first effect will be to prevent or deter him. Failing in this, it will make the facts establishing the offence so clear as to economize the time of the courts and law officers, and leave to them to decide mainly upon the character, turpitude, and degree of the offence charged, and thus adjust and apply the penalty. Hence in the draft of a law here presented, the defining clauses might be construed by the careful logic of a legally trained mind as mainly repetitions of one idea. Yet to the minds of the class of shrewd money-makers in the community to whom, and to whose practices the definitions are really addressed, the looseness of a general phraseology would fail in deterring them from taking the chances of discovery and conviction.

To illustrate the utility of careful and clear definitions of various known forms of the offence as aimed at by the different defining clauses, one or two typical instances of common adulterations are given in the margin of each defining clause to show its special application. And again, under this head, and for these same reasons, the standards for comparison by which the offence is to be determined, should be a part of the law and be much more definite than by the British law.

Secondly, the questions of intent to defraud, and of injury or prejudice to the purchaser of adulterated articles, either as to health or to cost, are carefully avoided, because in a definite, fully recognized shape they are often entirely wanting in the adulterator, and are always difficult to prove. A very large proportion of the adulterations practised are not attempts at fraud, nor designed to damage health, but are straining efforts to make money. And these efforts are so earnest and so intense, energetic, and absorbing as to leave all other considerations in the background. That the public is hurt and cheated is but an accident rather than a malicious intention.

In place of these the adulterator is made responsible for the effects of his acts in their more definite and physical relations to the public; and to the penalties imposed upon them. The offence then consists in the act of debasement, which is so easily proven by the debased article. And a pleading of absence of intent to defraud, or of the harmless character of the debasement to the individual purchaser, would simply amount to a plea of ignorance of the effects of the offence, and would influence the courts—not so much on the question of conviction—because the public offence of debasement has been committed, but simply as to the extent to which the adulterator should suffer in order to prevent others from similar acts through similar ignorance.

Thirdly, the making it the duty of the consumer who may be injured to prosecute the offences, using the inspectors merely as witnesses in the prosecutions, has been carefully avoided, because it has been found that very few persons have either the inclination, time, or money to give to such prosecutions, and that it is much cheaper for individuals to suffer than to prosecute.

Neither has it proved more effective to place the duty of prosecuting upon institutions or societies, giving them the fines or other emoluments in compensation, because in this way the work has rarely if ever been effectively done.

Hence, any law of this kind, to be reasonably effective, must embrace provisions for its own thorough and complete execution from beginning to end.

Then the organization necessary to carry into effect any such general and important law of so great necessity and so wide an application must be of exceptional and peculiar fitness, and therefore be very expensive, because it must consist of experts of a high order and especial training.

But just such an organization as would be necessary for such a law is now almost equally necessary for many

other important objects in connection with the public health interests of every State. That this State should have been so long without such an organization, when the experience of neighboring States all around has been so unequivocal in regard to the advantages obtained, is at least a remarkable fact.

In consideration of this fact it seems to this writer that no better time for the creation of a State Board of Health could be proposed than in connection with the enactment of a law to prevent adulterations, leaving to future laws the various other not less important duties which might be performed by a State Board of Health, as in the instances of Massachusetts, Michigan, and many other States.

The need for some such law as this is now so evident as to require no argument; and the advantages of State boards of health can, in view of the experience of many States, be no longer doubtful, even when no law such as this is among the duties of such boards. But whether this State would be justified in enacting so expensive a law, thereby increasing the taxes upon an already over-taxed population—that is, whether such a law would or would not be a true and wise measure of economy—is not so easily seen, and requires careful thought and consideration. By a very rough estimate based on the manufacturing and mercantile interests of the State, the losses to the population through practices of carelessness and adulteration, through over-competition and greed for money-making which such a law is intended to check and finally to prevent—cannot be less than seven hundred thousand dollars per annum, though probably much more. Then assuming the population of the State at five millions (recently given as 4,995,000), the loss per capita per annum cannot be less than fourteen cents. The State Board of Health here contemplated would cost the State about eighty thousand dollars a year, without trusting to fines or emoluments to reimburse any part of such cost. This would add one and six-tenths cents to the taxes per capita per annum in order to try to save fourteen cents. But suppose such a board should succeed in preventing only one-fifth of the estimated losses by adulteration, or two and eight-tenths cents per capita per annum, it would still be a public economy of over eight per cent per annum on a public debt which is neither unseen nor unfelt, though very much neglected by the working classes who suffer most by it.

If such a line of argument be admitted, it is easy to see that the enactment of such a law with such provision for its thorough execution would be wise and economical at any time.

Laws are effectual, and therefore of use, just in proportion to the means which they provide for their own thorough execution; and any law against such offences as adulteration which would not have full power within itself to enforce its provisions and penalties might cost little, but would certainly be useless. And if useless would be hurtful by debasing and diluting the public respect for law.

The rough draft of a proposed law, which is herein submitted to the Medical Society of the State of New York, was drawn up for presentation to the joint committee above alluded to, and will probably be presented to that committee before it is presented to this society. But it is a matter of great interest and importance to this society, and if placed before the society's constituency throughout the State by means of the volume of "Transactions" it will, doubtless, attract some of that attention which the importance of the subject deserves, and may assist in obtaining some such law from the Legislature.

The writer has for many years past given much attention to the subject of adulterations, and has pretty carefully watched the laws that have been enacted at home and abroad to try to check and control this rapidly increasing and insidious public evil, and having become somewhat familiar with some of the very great difficulties that have been developed by the operation of the various laws, he has drawn up this draft to meet and overcome those which seem most prominent. He has, therefore, what is believed to be a good practical reason for every provision here asked for in such a law, and can explain the objects of the provisions, if need be, by instances of deficiency or failure in former laws. Yet it is not pretended that this draft is anything like as complete and as well drawn as it should be. Some legally trained mind should examine analytically all the convictions and failures to convict which have occurred under the British law of 1875, and all the discussions and recommendations of the British Society of Analysts charged with the execution of that law. And also the report of a commission of the German Empire charged with making investigations during two years past, with a view to a law for Germany.

The British plan seems to have been to modify one law after another through a series of years, making each new law an improvement on the one preceding it; and a committee of parliament is understood to be now engaged in amending the act of 1875 in view of recent rulings and decisions of the courts. If now this State should take full advantage of that prolonged experience by sending a trained expert to examine it carefully, as Germany did, a proper law might doubtless be framed that would be far more efficient than anything that could possibly come from such inexpert efforts as these of the present writer. In this country and in others much time has been lost to this subject by hasty enactments passed without full knowledge of the difficulties to be met, and without full investigation of what had been already done in the way of attempts and failures, or without providing effective means for enforcing the laws thus passed.

AN ACT to prevent the adulteration of food and medicine by discovering and punishing the offence, and to repeal all other acts or parts of acts in conflict therewith, and to establish a State Board of Health.

Whereas the public welfare is injured by the adulteration of food and medicine; and whereas the practices of adulteration are increasing, and are not easily detected by the masses of people most injured by them, therefore

Be it enacted by the people of the State of New York through their representatives in the Legislature:

First. That for the purposes of this law the term "food" shall include every article used for the food and drink, or in the food and drink, of man and animals.

Second. That the term "Medicine" shall include every article, other than food and drink, that is used for the preservation of health, or for the relief or cure of disease, in man or animals, including antiseptics and disinfectants and cosmetics.

Third. The standards by which the offense of adulteration shall be judged, or the degree in which the offence may have been committed, shall be:

For simple articles of food a fair average quality of the substances in their natural condition, or as best prepared

by drying, grinding, packing, etc., without damage from their natural condition.

For compound articles of food, the publicly-known formulas or patents whereupon they should be compounded; or the labels or descriptions attached to the compounds as given, sold, offered, or held in possession.

For simple articles of medicine the standard shall be the United States Pharmacopœia for all articles embraced by that authority. For articles not so embraced, the national pharmacopœias of other countries.

When not embraced in these, some commonly accepted standard authority. For compounded articles of medicine the same standards as above cited for simple articles, for all which they may embrace. For all other compound medicines the standard shall be the formula or recipe attached to the compound by label or otherwise when given, sold, offered, or held in possession; or the physician's prescription or recipe by which it shall have been compounded, or the patent or recipe to which the name or trade mark of the compound applies. In the case of proprietary or private compounds, the constituents of which are legally held as secrets, the testimony of the owners of the private formulas shall be accepted as evidence of the character of the compound.

Provided, that nothing herein contained shall be construed so as to protect or permit the issue of any compound which contains any poisonous or hurtful ingredients not publicly stated and professed by the label attached to the compound when given, sold, offered, or held in possession.

[Alum in baking powder; lead in cosmetics; powerful drugs in patent medicines.]

Fourth. For the purposes of this law the offense of adulteration shall be as follows:

1. The adding of one or more substances to another or others whereby the strength, purity, quality, or true value of the resulting substance or mixture is reduced or lowered in its nature or composition with the effect of tending to deceive the public by lowering such substance or mixture from its original and true value, or altering the public significance and common meaning of the name by which it is or was originally known or used.

[Corn meal in flour; chicory, etc., in coffee; terra alba in cream of tartar; foreign substances in powdered opium.]

2. The substitution of one substance for another, either wholly or in part, with the effect of tending to deceive or mislead the public or any part thereof.

[Artificial wines and liquors and mixtures; artificial mustard; powdered colocynth seed for colocynth.]

3. The abstraction of any part of any substance with the effect that the separation shall reduce the value of the substance and thus tend to deceive or mislead by changing the common significance of the name by which, as a whole the substance was originally applied to its use.

[Cream from milk, partly exhausted coffee, tea and drugs; thymol from oil of thyme.]

4. The application of a name commonly known or understood to indicate any substance, to any part or parts thereof, or to any other substance, with the effect of tending to deceive and mislead.

[Oleomargarine for butter; potato starch for arrowroot; dead oil for carbolic acid.]

5. The presence in any substance of any impurity, or any foreign matter that is either natural or accidental to it, if in unusual proportion.

[Dirt in all food and medicine; metallic salts in canned provisions.]

6. The admixture of different qualitites of the same substance with the effect of tending to deception and fraud.

[Damaged wheat in flour; garden rhubarb in medicinal rhubarb.]

7. Any debasement or dilution of any substance whereby it is reduced in intrinsic value and is yet liable to be given, bought, sold, or used as though it was not debased or diluted.

[Diluted milk; diluted vinegar; diluted liquors; diluted medicines.]

8. Any coloring, coating, polishing or powdering or any other alteration in the physical condition or sensible properties of any substance, with or without addition to, or subtraction from it, whereby damage is concealed, or it is made to appear better or greater than it really is, either in quality, weight, or measure; or whereby impurity or defective quality is partially or wholly masked or hidden, with the effect of tending to deceive or mislead.

[Coloring and polishing of green coffees; powdering and coloring of damaged drugs; bread from damaged or mixed flour; "large" bread of short weight.]

9. The giving or selling or offering for sale, or the possession of any adulterated article by any person whose business it is to make or to deal in articles of food or medicine shall be prima facie evidence of the offence of adulteration. Provided that it be, and it hereby is declared to be, the sole and entire object and intention of this law to protect the public against deception and fraud in the cost and quality of food and medicine through adulteration. And all the provisions of this law shall be construed and applied in accordance with its sole object, by the rules of common law.

No person shall adulterate, nor cause nor permit any other person to adulterate, any article of food or medicine, under a penalty in each case not exceeding two hundred dollars fine for the first offence. But every offence after a conviction for a first offence shall be a misdemeanor, for which, on conviction, the person shall be imprisoned with hard labor for a period not exceeding six months.

No person shall give, or sell, or offer for sale, or hold under the ordinary conditions of salable commodities, any adulterated article of food or medicine, under the same penalties as in the preceding section.

No person shall give, or sell, or offer for sale, or hold under the ordinary conditions of salable commodities, any article of food or medicine which may have become, through natural or accidental causes, deteriorated or adulterated so as to be unfit for common use, under the same penalties as in the preceding section.

For the proper execution of this law, and for other purposes in connection with the public health, there shall be formed within eighteen months after the passage of this law a State Board of Health, to consist of five members to be appointed as follows:

Within one week after this act becomes a law, the Governor shall invite the Medical Society of the State of New York, through its president, to nominate through its nominating committee four prominent physicians who may or may not be members of the society. He shall also invite the faculty of Columbia College, through its president, and the faculty of Cornell University, through its president, each to nominate one expert chemist and physicist. He shall also invite the Bar Association of New York and the Medico-Legal Society of New York each to nominate, by a committee raised for that purpose, one expert lawyer. From these eight nominees the Governor shall select and appoint, with reference solely to their fitness for the duties involved, two physicians, one chemist and physicist, and one lawyer; and upon his own motion he shall select and appoint one business man, who shall be or shall have been an experienced merchant or manufacturer, and these on being sworn in shall constitute the State Board of Health, and as such be empowered to sue and be sued, and do all other acts, etc., for the due execution of the laws with which they may be charged.

In case of the failure of any or of all the bodies invited by the Governor to nominate at their next succeeding regular meeting, it shall then be the duty of the Governor to invite nominations or suggestions from any other competent prominent public bodies or individuals, whose especial training and knowledge of the fitness of experts for such duties is likely to be found, and to select and appoint any or all the remaining members from such nominations or suggestions, as in his judgment shall be best for the interest and welfare of the State.

Thus constituted, the Governor shall call the board together, and shall appoint from their number a tempo-

rary president and secretary. The board shall then organize and proceed to a consideration of its duties, and of a plan for carrying out the provisions and intent of this law in detail. Then, after due deliberation, it shall elect by ballot, from its own number, a president of the board, to hold office during the pleasure of the board, by annual elections. The board shall then select and appoint (not from its own number) a secretary who shall, under the direction of the board or its president, perform all the duties of secretary, treasurer, and executive officer of the board.

This State Board of Health may, by a majority vote, at any time, report to the Governor of the State any changes in its membership that such majority may desire, and the Governor shall proceed forthwith to make such changes in the way prescribed for the original construction of the board.

The offices of the State Board of Health shall be located in the city of New York, and the board shall be authorized to procure the necessary rooms, furniture, apparatus and books, and to employ the clerks, messengers and laborers that may be necessary. The business meetings of the board shall be held not less frequently than once a month, and three members shall constitute a quorum for the transaction of business.

As soon as the State Board of Health shall have completed its permanent organization, and have matured its plans of operation, and within three months after its appointment it shall, by public advertisement, issue proposals for competitive examinations to be held by the board at such times and places as may be deemed best for obtaining subordinate officers for the board. By such competitive examinations, the board shall determine the qualifications of any number of persons to execute the various povisions of this law, by rules and regulations adopted by the board.

From the number of persons thus found qualified, the board shall then select, constitute and appoint, a Board of Inspectors of Food and Medicine, to consist, at first, of not less than seven members, or one for each half million of inhabitants of the State, said number to be increased from time to time as experience in the requirements of the law may indicate. The members of this subordinate board shall hold office at the pleasure of the State Board of Health, and removals and vacancies of all kinds shall be filled in the way prescribed for the original construction of the Board of Inspectors.

The State Board of Health shall, at the same time and in the same way, select by competitive examination from the profession of law any number of persons qualified legally to enforce the provisions of this law. From the persons thus found qualified the board shall select, constitute, and appoint a Board of Prosecution for legally enforcing the provisions and the intent of this law by securing punishment of the offences committed under it. This Board of Prosecution, under the Food and Medicine act, shall consist at first of not less than four members—one for the western, one for the middle, and two for the eastern parts of the State, and its members shall hold office during the pleasure of the State Board of Health, and all vacancies in it shall be filled in the way prescribed for the original construction of the board.

The duties of the inspectors of food and medicine shall be to discover the offence of adulteration and obtain evidence thereof by systematic methods to be established by the State Board of Health, and to serve as witnesses in the prosecutions of the offences by the prosecuting officers before the court.

For the purpose of discovering adulterations of food and medicine and obtaining competent evidence of the offences, said inspectors shall each obtain and examine carefully not less than ten articles of food and medicine each week, and keep a full record of the dates, methods, and results of each examination.

Each inspector shall cause it to be publicly known in his district that will he receive, for a moderate charge to be fixed by the State Board of Health, all complaints of suspected adulterations, and will investigate such complaints if need be, by the same methods as may be directed for the examinations made on his own motion. And he shall keep a full record of all complaints that may be made to him, and of his proceedings in each case, for presentation to the State Board of Health.

The board of inspectors shall hold meetings at stated times, not less frequently than semi-annually, to compare the experience of the members in their duties, and to secure improvement and uniformity in their methods of proceeding; and to preserve a concert of action throughout the State. And the board shall report the proceedings and its recommendations to the State Board of Health for reconsideration and action.

The Board of Prosecution, under the Food and Medicine act, shall hold meetings at stated times, not less frequently than semi-annually, for the same purposes as the board of inspectors, and shall report their proceedings and recommendations to the State Board of Health in the same way. Each member of the board of prosecution for his own district shall receive from the State Board of Health all cases that the State board shall order to be prosecuted, and shall prosecute all such cases in the name of the people of the State in the proper courts of law, following each case to its proper legal issue by the methods and rules of procedure in use by district attorneys. And each shall preserve a careful record of each case referred to him and report the results to the State Board of Health.

The State Board of Health shall at its discretion provide office room, furniture, and attendants for its inspectors and law officers in their various localities.

Each member of the State board of health shall receive an annual salary of two thousand dollars, and the president of the Board shall receive one thousand dollars additional annual salary.

Provided that any member who fails to attend any meeting of the Board, or any part of any meeting, shall forfeit and lose one-twelfth part of the annual salary to which he may have been entitled for every such meeting or part of a meeting which he may have failed to attend.

The secretary of the State Board of Health shall receive an annual salary of three thousand dollars.

Provided that he gives his entire time and labor to the service of the board; and provided that for any part of his time in which he does not do the duties of his office, he shall not receive the pay.

Each member of the boards of inspectors, and of prosecution shall receive an annual salary of four thousand dollars.

Provided that he shall be prohibited from entering into any other business or occupation than that of the State Board of Health; and provided that he shall receive no perquisites nor fees, nor any other compensation of any kind whatever; but shall give his entire time and service to the State Board of Health for the annual sum of $4,000. And provided further that all time lost from any cause shall be deducted, pro rata, from his annual salary.

All authorized expenses and expenditures of the State Board of Health shall be audited and paid from the State treasury upon the vouchers of the president of the board in the same manner and by the same rules as the expenses of the State courts are paid.

All fines and receipts of money from whatever sources, collected or received under the provisions of this act, shall be paid into the State treasury semi-annually by the president of the State Board of Health.

On the 30th day of November of each year, the State Board of Health shall report its proceedings for the year to the Governor of the State, said report to be transmitted by the Governor to the next succeeding session of the Legislature, with such comments or suggestions as the Governor may see fit to make.

BROOKLYN, January 10, 1879.

"NEW REMEDIES," an Illustrated Monthly Trade Journal.
New York, April, 1879.

PROF. FRIEDRICH A. FLÜCKIGER,
OF STRASSBURG.

DANIEL HANBURY, F.R.S.
[DIED MARCH 24, 1875.]